BEFORE THE

FEDERAL ENERGY REGULATORY COMMISSION

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NORTHEAST ENERGY INFRASTRUCTURE : Docket No.

CONFERENCE : AD02-6-000

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Park Lane Hotel

36 Central Park South

New York, New York

Thursday, January 31, 2002

BEFORE:

RICK MILES, Facilitator

AGENDA

1. Opening Remarks:

   Chairman Pat Wood

   Commissioner Nora Mead Brownell

   Commissioner William Massey

   Commissioner Linda Breathitt

2. Overview of Energy Infrastructure by Jeff

   Wright, Office of Energy Projects, FERC

3. Forecasts for Future Energy Use/Economic

   Impacts of Energy:

   a) Mary Novak, DRI-WEFA

   b) Scott Sitzer, EIA

4. Near-term Energy Infrastructure Needs:

   a) Steve Whitley, New England ISO

   b) Craig Frew, New England Gas Association

   c) Roger Lanoue, Hydro-Quebec

   d) Eric Gustafson, Buckeye Pipeline

   e) Eugene R. McGrath, Consolidated Edison

   f) Douglas M. Logan, Platts RDI Consulting

   g) Caroline Petti, EPA

5. Identifying Factors Affecting Adequate Energy Infrastructure:

a) Pete Dunbar, Maryland PPRP

b) Richard Krause, Duke Energy Gas Transmission

c) Ron Erd, Mirant Corp.

d) Richard Cowart, Regulatory Assistance Project

e) Ashok Gupta, Air/Energy, NRDC

f) Sonny Popowsky, Pennsylvania Consumer Advocate

g) Christine Uspenski, Charles Schwab & Co.

h) William R. Randolph, City Councilman, Mt. Vernon

i) Michael Zarin, Legal Counsel

6. Discussion by State of Federal Officials of Next Steps:

a) Glenn Booth, Canadian National Energy Board

b) Maureen O. Helmer, Chairwoman NY PSC

c) Don Downes, Chairperson Connecticut Public Utility Control

d) Arnetta McRae, Chairwoman Delaware PSC

CHAIRMAN WOOD: Thank you, Rick. My name is Pat Wood, Chairman of the Federal Energy Regulatory Commission. I'd like to welcome you all here today. I appreciate particularly the participation of the governor's representatives from the Northeastern states and our fellow Commissioners from across the region. We're honored by your presence and participation here today as well as all the other interested folks who are here to talk about a critical topic, which is the health and the state of the region's energy infrastructure.

Our agency has three principal goals. First is to ensure a high quality, secure and environmentally responsible energy infrastructure. Second is foster competition in the nation's energy markets, and third is to protect customers by vigilant oversight of those energy markets.

The first of these goals, and it's first on purpose, is the state and health of a vibrant, secure, environmentally responsible energy infrastructure. And that's what we're here to do today is to learn firsthand about the status of this region's infrastructure for energy purposes. And it's not just the visible things you see. I would like to call attention to the map that the folks at Platt's RDI were kind enough to prepare for today's conference, a small copy of which is outside for your use.

But it is an attempt to look at the power plants, the transmission lines, and the gas pipelines all in one map.

We also acknowledge that certainly a part of the mix in the southern part of this region is coal, and railways are a very important part of that as well. Had we put that on the map, it would have been just too much. So please recognize the limitations of needfulness on a map. But to visually look at what infrastructure we have here in the Northeast is a helpful first step and I appreciate that visual aid and recommend it for your use. Again, it's outside on the table.

I want to thank you all for being here. I want to thank our Staff and the people at the hotel for their participation in helping get this room set up. I know it's a little unusual to be staring into a mirrored column, but most of the action will be in the center table.

(Laughter.)

CHAIRMAN WOOD: So you folks who are just hearing my disembodied bad accent voice in the back, you won't have to listen or guess where it's coming from for long, because we're passing it off to more capable folks.

I am pleased to be here with my wonderful colleagues who I enjoy coming to work with every day. Nora Brownell, Bill Massey, and Linda Breathitt, and would like to call on them if you all have anything to add before we

kick it off.

COMMISSIONER BREATHITT: We're just glad to be here.

COMMISSIONER MASSEY: I don't have anything.

CHAIRMAN WOOD: Great. We are here to listen and learn and to look for opportunities. One of the things we'd learned from our first of these hearings, roadshows in Seattle, when we talked about the status of infrastructure in Northwest was a helpful dialogue and uncovering of all the issues is a good first step. I don't expect that we'll come out of this with all the answers today, but this is the beginning and will be the first of many opportunities for us to talk about what we can do collaboratively to enhance this region's infrastructure. It's not something that FERC can do alone, that the states can do alone. It's something that requires an important finessing of all us working together, both in the public and the private side. And so I look forward to figuring out what it is that needs fixing so we can get fixing on it.

It's my pleasure at this point to -- let me get his name card. Where's Jeff? There you are. Jeff Wright is one of our stars at the Commission and he's going to be talking today about some of the more background data that underlies our discussions. And I want to turn it over to him with no further ado. Jeff, come on up.

MR. WRIGHT: Thank you, Chairman Wood. And I'd like to welcome you once again to the Northeast Energy Infrastructure Conference. With me up here when we answer questions after my presentation is Scott Miller of the Office of Markets, Tariffs and Rates, and Tom Dewitt of the Office of Energy Projects. And again, my name is Jeff Wright. I'm with the Office of Energy Projects.

When you came in you received a handout or picked up a handout at the door that contains a copy of my slides and also the more detailed data book that underlies those slides.

Now the purpose of my presentation is to give a snapshot view of the current energy infrastructure in the Northeast regarding electric, gas, hydro, as well as taking a look at oil and coal. Now for the purposes of this conference, Northeast consists of the 11 states you see on the map plus the District of Columbia, and also contributions from the eastern Canadian provinces will be considered.

Now first I'd like to take a quick look at some statistics comparing the Northeast to the U.S. as a whole.

Now this slide shows how the population, gross domestic product and energy use grew in the U.S. and in the Northeast between 1990 and 1999. As you can see, population increased by 9.6 percent in the U.S. versus 2.4 percent in

the Northeast. GDP went up by 63.1 percent in the U.S. versus 53.4 percent in the Northeast, and energy use increased nationwide 13.9 percent versus 10.3 percent in the Northeast.

It is worth noting that on a per capita basis, energy use in the Northeast increased by 8.4 percent during this period while energy use in the U.S. increased by 4 percent.

Now turning our attention to the electric infrastructure in the Northeast. As this slide shows, there has been an increase in Northeast generating capacity in the last five years from 111,000 megawatts to 124,000 megawatts, an increase of 11.6 percent. Now capacity through September 2001 increased this number to 127,100 megawatts, a 14.6 percent increase over 1995.

Coal and fuel oil still account for over 50 percent of the generation capacity. And you can see over this time, though, the only fuel to gain generation capacity was natural gas. The share of generation capacity for all other fuels decreased over the same time period.

Looking at generation output, it increased by over 25 percent from 1995 to 2000 from about 385 terawatt hours to 480 terawatt hours. Coal and nuclear accounted for over 77 percent of the generation output in 1995, slightly over 70 percent in the year 2000.

Natural gas's share of total generation output increased fourfold over this time period, and no other fuel source increased its share of generation output over the same time period.

Looking at new generation capacity, the Northeast plans to increase capacity by about 33,000 megawatts by the end of the year 2004, about a 27 percent, 26 percent increase over the generation capacity existing by the end of the year 2000. About 12,000 megawatts are under construction, 9,000 megawatts are in the advanced development stage, and 12,000 are in what we call the early development stage.

Turning from generation to transmission, the Northeast currently has a total of 53,259 miles in transmission lines. This slide shows how the mileage is divided between the NERC subregions in the Northeast. These facilities have an asset value of $15.1 billion.

Now we're going to look at three large merchant transmission projects which are under development in the Northeast. The first, the Neptune Regional Transmission System, in an 1,800 to 2,500 high voltage direct current transmission system that would go from Canada Sub C to the Boston area and to the New York City/New Jersey metropolitan area. It has a 4,800 megawatt capacity and an estimated cost of $4 billion.

A second project is the TransEnergy Cross Sound Cable that would go from Connecticut to New York, a 24-mile DC transmission cable, 330 megawatt capacity at an estimated cost of $120 million.

A final merchant transmission project in planning is the Lake Erie project from Ontario to Pennsylvania and Ohio. It's about a 70-mile direct current transmission line with 975 megawatt capacity.

Now in the summer of 2001, the Commission identified four major M constraints in the Northeast, and I'm going to tell you what the constraints are and the amount of dollars that costs the ratepayers due to these constraints. In Southeast Pennsylvania, the constraint there costs an extra $16 million. The Eastern New York constraint costs ratepayers an extra $64.6 million. The Southwest Connecticut Interface cost $4 million extra, and the Northeast to Boston constraint cost an addition $60 million.

Now taking a look at gas infrastructure. As you can see, gas consumption in these sectors increased by more than 35 percent between 1990 and the year 2000 from around 2.5 TCF to almost 3.4 TCF. Northeast gas consumption in 2000 was 16.6 percent of U.S. consumption of approximately 20.8 TCF. Residential consumption was relatively flat during this period. The commercial sector did consumer

about 90 percent more gas in 2000 than it did in 1990. Electric generation's consumption of natural gas more than doubled during this time period from 368 BCF to 830 BCF.

Looking at how the gas is transported, there are 10 major U.S. pipelines that serve the Northeast gas market. In addition, TransCanada and Maritimes of Canada deliver gas to the U.S. pipelines in the Northeast. From 1990 to 2000, capacity to the Northeast grew from 10 BCF per day to 13.3 BCF per day, a 33 percent increase. And about 75 percent of that capacity growth, 2.5 BCF per day, will deliver Canadian imports.

Now looking at how the gas gets to the Northeast. The Northeast is dependent upon gas supplies from the offshore Gulf, the Southeast, the Southeast, the Southwest, Midwest and Canadian and LNG imports. Canadian imports enter the Northeast at four primary points: Niagara, New York; Waddington, New York; Pittsburg, New Hampshire; and Calais, Maine. LNG imports from several countries currently enter the Northeast at the LNG terminal near Boston, Massachusetts, and LNG imports will commence at Cove Point, Maryland, in the near future.

Now this slide shows those major pipelines that deliver gas to the Northeast. The first seven pipelines all were in existence prior to 1990 and could be considered the traditional gas suppliers to the Northeast. And as you can

see, the gas reach only went up as far as Boston.

The last three pipelines I'm going to show you -- Iroquois, Maritimes and Portland Natural Gas Transmission System -- were constructed and placed and into operation in the 1990s. Significantly, these three pipelines originate at the U.S./Canadian Border.

Looking at Canadian imports, they increased by about 50 percent between 1996 and the year 2000. Over this time, the Northeast share of Canadian imports to the U.S. grew.

Significant increases in imports occurred in 1999 as the PNGTS project came on line, along with increased imports by Iroquois and by Tennessee. The year 2000 saw another huge leap in import volume as Maritimes came on line and import volumes received by PNGTS, Iroquois and Tennessee increased.

These great jumps in consumption in 1999 and 2000 were made possible by the new infrastructure provided by the three new pipelines built in the '90s: Iroquois, Maritimes, and PNGTS.

Currently at the Commission there are six major construction projects pending, totaling just over one BCF per day of capacity. These projects will not increase the capacity of gas that can actually be transported from Canada. However, it will provide new customers in the

Northeast, especially electric generators, with more gas supply options. That is, these customers can opt for the cheapest supply which, given the location, may be eastern Canadian supplies from the Sable Island area. Such options also allow traditional domestic supplies to the Northeast to be marketed in areas closer to the gas source, thereby reducing the transmission cost to those customers.

Thus, additional infrastructure in the Northeast can not only provide cheaper gas supplies to that region, it can also result in less expensive gas to other areas of the country.

Now there are four projects we expect to be filed in the near future. These potential projects total over 2.3 BCF per day of capacity. The Maritimes expansion and the Blue Atlantic project will have the capacity to bring about 1.4 BCF per day from offshore Nova Scotia.

Looking briefly as gas storage in the Northeast, in 2000, there were 81 active fields in the Northeast, 58 in Pennsylvania, 22 in New York, and one in Maryland, with a total capacity of 922 BCF representing 11.2 percent of the total U.S. storage capacity.

Now taking a quick look at hydroelectric, the red dots on this map of the Northeast represent Commission-approved hydroelectric sites. In addition, as you can see on the maps around the room, there are significant imports

of electricity generated in Canada from hydro sites in Canada.

There are 529 FERC regulated hydroelectric projects in the Northeast, with a total capacity of 14,343 megawatts. Preliminary permits have been issued to determine the feasibility of installing an additional 232 megawatts at 35 Northeast sites.

In 1995, electric generation from Northeast hydro was 29 terawatt hours and 24.1 terawatt hours in the year 2000, and in 2000, 5 percent of the total electric generation output was fueled by hydroelectric sources.

Now turning to oil, this chart shows Northeast fuel oil consumption by sector. Electric utilities are the largest uses of residual fuel oil number 5 and number 6 in the Northeast. Residual fuel oil sales are declining as natural gas displaces residual fuel oil in electric generation plants and as new gas-fired plants replace older oil-fired plants.

Residential and commercial sectors are the primary users of number 2 fuel oil. Number 2 fuel oil has not been impacted by increased natural gas usage, since the residential user cannot easily switch fuels and therefore is not price sensitive.

In 1999, fuel oil accounted for 20 percent of the total energy consumption in the Northeast.

Looking at the refining capacity in the Northeast, there are 10 refineries in Delaware, New Jersey and Pennsylvania with an operating capacity of 1.47 million barrels per day. There are two crude oil pipelines located in New Hampshire, Maine and Vermont, and they delivered 179.7 million barrels in 2000. Five product pipelines are located in Connecticut, Massachusetts, Rhode Island, Pennsylvania, New York and New Jersey, and they delivered 1.5 billion barrels of products and 475.4 million barrels of crude oil in 2000.

Switching attention to coal, Pennsylvania and Maryland are the only coal-producing states in the Northeast. Coal production in the Northeast totaled over 79 million short tons, or about 7.2 percent of total U.S. production. Northeast coal consumption declined by almost 50 percent in the last five years, from 91.3 million short tons to 45.3 million short tons.

With regard to the use of coal for electric generation, almost 86 percent of coal consumed in the Northeast in 2000 was used to generate electricity. 35.6 percent of electricity generated in the Northeast in 2000 came from coal. Nationwide, the electric utility sector accounted for almost 80 percent of coal consumed in 2000, and I'd also like to point out that Northeast has consumed coal by wire via imports to the region from Kentucky,

Tennessee and other Midwest states.

Now in conclusion, natural gas is playing an increasingly larger role in the generation of electricity in the Northeast. Traditional methods of fueling electric generation -- coal, oil, nuclear and hydro -- still make significant contributions, but their share of generation load is decreasing.

Infrastructure additions in the Northeast will allow markets to take advantage of low cost energy supplies, and low cost energy will in turn facilitate economic growth in the Northeast region.

That concludes my presentation, and we would be glad to entertain questions.

QUESTION: Jeff, can you speak a little more to slide 9 where you articulated some of the costs of the constraints? Because I think we took a picture in time that may not represent the seriousness of those constraints, that they've been much, much higher, for example, in the summer of 2000. Could you say a little bit about that?

MR. WRIGHT: Yes. I have to say that the cost, the constraints that we did in the December transmission constraint study were based on a very short period of time. For example, the New York east constraint was based on summer, I believe it was summer 2000 data. It is a binding constraint most of the time in peak periods and so over time

represents even a greater amount. It depends on how powers are flowing, how the weather is.

The Southeast COnnecticut Interface is one that has increased prices in Southeast Connecticut over almost every summer that the New England ISO has been in operation. So the cost in terms of additional power prices, if you do it cumulatively, is quite significant. And the Southeast Connecticut Interface obviously affects people in Long Island and New York City. East New York affects most of downstate New York. Northeast Boston -- these are in the high population centers, and the economic impact can be quite significant as well, too.

QUESTION: (Inaudible.)

MR. WRIGHT: Which slide number were you referring to?

QUESTION: (Inaudible.)

MR. WRIGHT: Entirely gas-fired, yes.

QUESTION: (Inaudible) cheaper?

MR. WRIGHT: Excuse me?

QUESTION: You're not going to get it cheaper.

MR. WRIGHT: Is that a question or an insertion?

(Laughter.)

QUESTION: Is it consistent with the national policy announced by the President?

MR. WRIGHT: Well, right now it's the market

making a choice to build generation based on what it considers the most efficient and least cost fuel. And what we've seen is gas-fired has been one that's been proposed.

QUESTION: (Inaudible) pollution, depend upon oil imports, and all this oil depends upon increasing the gas generation accordingly (inaudible). Statistic that more and more nuclear energy should be brought into the future.

MR. WRIGHT: In our statistics, we do not see any nuclear --

QUESTION: (Inaudible) nuclear energy that represent (inaudible) and that over the next three years, what the President is going to do?

MR. WRIGHT: What it will be in the next few years? Well, obviously, if all the generation is going to be gas-fired, the other sectors contributing fuel to electric generation will decline as well unless someone proposes to construct a new nuclear facility, for instance.

QUESTION: (Inaudible.)

MR. WRIGHT: We at the Commission, we do not certificate electric generation facilities. We don't certificate nuclear facilities.

I think in answer to your question, it's an issue to look at in the overall generation mix of things, especially going forward. But it's an issue that will have to do with regard to affecting policy going forward. But

it's one of many issues.

CHAIRMAN WOOD: We do have some panelists later in the day that that might be a relevant question to ask. So why don't you remember to ask that when we do talk about that in the afternoon panels?

QUESTION: Plants that are coming on line, gas plants, are any of them baseload plants, or are they all keepers? With the assumption that natural gas is the least cost, most efficient fuel (inaudible) is the most profitable fuel to use in these plants.

MR. WRIGHT: I think that the next panel will be more than capable of answering that, but I think it's a mix of intermediate and baseload?

QUESTION: I think you alluded to this a little bit earlier. But I've seen reports that have indicated that the transmission congestion in New England amounts to a couple hundred million a year right now and is growing to five or six hundred million a year. I've seen reports for New York that say the constraints are already approaching $1 billion or getting pretty near it this year and the next year and will eventually grow to well over $1 billion. And

I've seen PJM reports that indicate also numbers in the hundreds of millions of dollars looking out over the next couple of years. And I'm having a little trouble reconciling the numbers. And you've certainly hit the

biggest bottlenecks in your report. But talking about numbers that are measured as two or three million, four million dollars versus the huge numbers that I've read elsewhere is something that I'm just having trouble understanding how to reconcile those. Could you maybe talk a little bit about the assumptions you made or give a little bit of help to the audience as to how to reconcile those numbers?

MR. WRIGHT: Well, I'll tell you, the nice thing about the study that we did was in the Northeast, it was pretty easy to come up with the numbers because we have RTOs -- pardon me, ISOs in place.

(Laughter.)

COMMISSIONER BREATHITT: But they're voluntary.

MR. WRIGHT: They're voluntary, right.

(Laughter.)

MR. WRIGHT: And they work great. But anyway, and so the numbers are quite easy to come by. Now the difficulty was is that we were trying to do them over very short periods of time because the numbers in the rest of the country, particularly in the Southeast, the Midwest, the Rocky Mountain area, are particularly hard to come by. So we were having to do snapshots.

I would presume that when you're talking about a billion dollars, you're talking about over a much longer

period of time, perhaps a year, okay. We weren't doing that in our study. And we just tried to say, you know, just for this area, this is what it is for just this short period of time.

CHAIRMAN WOOD: Can I follow up on that, please? I had the same difficulty. I thought we got a slide presentation within the last few weeks that indicated that the constraint into New York cost $700, $800, $900 million during whatever period of time was measured. And I recalled it was the summer of 2000.

MR. WRIGHT: Right.

CHAIRMAN WOOD: Do you reflect that? Or was this a different timeframe?

MR. WRIGHT: Ours is a different timeframe. I believe the timeframe we used with regard to the East Central constraint was for a one-month period as opposed to an entire summer. So you have to be careful about this and do an apples-to-apples comparison.

COMMISSIONER BREATHITT: But, Scott, I think the point is that this gentleman's numbers are closer to the reality of the cost. So when we take a snapshot, those numbers do not really reflect the enormous impact on the customer.

MR. WRIGHT: No. Absolutely. And let me restate what the point of that study was. The point of the study

was to demonstrate that there is this cost to the marketplace that exists, which can be solved through a number of things. It can be solved through demand response. It can be solved through additional generation builds in high cost areas, or it can be solved with transmission construction.

One of the issues that confronts the states is the effect on ratepayers. And we were trying to demonstrate in the overall bill, the average bill to the average ratepayer, the percentage that transmission fixes. It's very minor. And if you assume a very robust transmission-only build, which obviously you wouldn't, you know, in real life do, the effect on the average ratepayer's bill is fairly small if you assume no energy savings. But we know that energy savings would occur. And so we try to demonstrate on the average ratepayer's bill through assumed energy savings of 5 to 10 percent, there would be a significant savings. And so we were just trying to stimulate discussion.

MR. MILES: Are there any more questions?

(No response.)

CHAIRMAN WOOD: Thank you, Jeff. And again, if you'll just hold onto those numbers through the day, we will kind of use those as a reference book. That presentation as well as the detailed book that underlies that from which all

the source material was drawn will be available on the Commission's Web page by tomorrow.

At this time we'd like to go into the third segment of our agenda for today, and that is a discussion about the forecast for future energy use and the economic impacts of energy.

To join us in that discussion we have two experts that we would like to introduce to you. As we go through the day, rather than giving you a full bio in the source books, we have the individual biographies of all today's participants.

Is Scott here? At this point I would welcome Mary Novak, managing director of energy consulting for DRI-WEFA and also invite Scott Sitzer, director of the coal and electric power division of Department of Energy's Energy Information Agency Administration for a discussion about the region's economic and demographic outlook and capacity for growth of energy needs over the period.

Mary and Scott, welcome.

MS. NOVAK: Thank you for inviting me. It is a pleasure to be here. I did bring a few slides, a few overheads, or I can just talk in general about what is happening in the New England market.

For those of you who don't know what we are, we are the recently merged companies of Data Resources and Warner Econometrics. Last May we merged and are now the largest leading provider of economic information globally.

With that said, I would like to talk a little bit, very shortly actually, because we are sort of background operation today, to discuss what is the economic outlook for the New England region, U.S. as a whole and how that translates into requirement for energy demand and puts some context into the requirements for infrastructure.

I want to put up some numbers. Jeff spent some time talking about historical development of energy markets in the northeast. I would like to tell you a little about where we are going now.

As you can see, I looked at the previous 5 years, next 10 years. The New England market, New England Mid-Atlantic and I isolated New York there, is expected to grow at a much slower rate in terms of population. We've been growing at a much slower rate. We have almost 1 percent growth in the population throughout the rest of the United States, but here in the New England market New England is growing about a half a percent a year, but the middle Atlantic market is only growing about half that rate.

So we are suffering or have some popular constraint in terms of expanding these economies.

In terms of the short-term outlook, our

latest outlook says the economy of the United States will begin to recover about the second quarter. This is not a very deep recession, not very long lived. We are going to have a third quarter of negative growth this quarter and begin a recovery in the second quarter. The recovery will take a very long time, though the recession was not actually all that deep and we are coming out of it based upon federal expenditures with some help from consumers. It will actually take us about eight quarters to return to what we would now consider normal growth.

That means throughout the year 2002 and 2003 we will only be experiencing growth at about 1 percent this year, 2 percent next year, before we return to growth over the period 2004 to 2010 of about 3 percent per year.

3 percent per year is pretty good, but it is still significantly slower than what we experienced in '99 and 2000.

You can see we are going to have a dip there from 2000 to 2005. That provides some latitude in terms of infrastructure developments for energy or some pressure on energy producers during that period.

What does this mean for New York, New

England, the rest of the middle Atlantic states? Our economies are predominantly dependent upon service and what we are anticipating is that we are going to essentially lag the U.S. recovery by a little bit. We are not going to actually start to see the recovery in our economies here in the northeast until more like the third quarter. We are going to be about a quarter behind the rest of the economy.

We are going to recover based upon high tech industries, which means that manufacturing will continue to decline in these regions over the next 10 years. It also says that our growth in fuel will be by income growth rather than population growth, manufacturing growth. In terms of energy requirements, we have relatively low population growth, we have declining manufacturing growth and we have rising income. So even though our economy on the face of it in terms of gross output will be increasing, some of our fundamentals are really growing at a much slower rate than the rest of the United States.

The next slide? There is the real income impact, as you can see. We will be moving back up to the 3, 3 and a half percent rate in the second

half of the decade after suffering two or three years of fairly week income growth.

That is total employment. Let's switch down to the next one, services.

Manufacturing. As you can see, the rest of the economy of the United States is going to be pushed ahead by manufacturing growth in the latter half of the decade. During that period growth in those economies that participate in that will be much stronger much faster than here in the New England region.

So this is the driver. We only have, as I said, about a half percent growth in population in New England and about a quarter percent growth in population in middle Atlantic. So when we have non-manufacturing employment moving at only about 1 percent per year, our economic performance in terms of our income, in terms of the fundamentals -- requirements for housing, requirements for manufacturing -- they are only going to be growing about 1 percent per year along with this non-manufacturing employment number.

To put it in context, we have had a boom time in income in New England and Mid-Atlantic the last couple years. We are going to be suffering.

While not quite as deep a recession as some of the rest of the economies, we will be suffering somewhat of an extended recession, not experiencing the turn-around up here until the third quarter. So we will be lagging everybody else and it will take us a full eight to ten quarters to recover to our previous income growth levels.

What does this mean for energy? It means that we are going to be growing pretty fast, but probably not as fast as we were anticipating when we had some cessation at the loss of our manufacturing and we were experiencing much faster growth in our service sector economies.

What is happening here in electricity sales, what I have done here -- you know where you are today. These are electricity sales indexed to the year 2000 for New England, Mid-Atlantic and United States. Mentally, you say I know how we are doing in 2000. What does this mean on a go-forward basis?

It says over the next 10 years we are anticipating about a 1 percent growth in electricity sales in middle Atlantic and New England and that as we go forward what that means is that over the next 10 years we are going to be selling about 20 percent

more electricity in the year 2010 than we are today.

That is a pretty big number, 20 percent more. As you can see, we have a short-term dip. So we are going to be having no increase in sales for this year, potentially next year, and then we will have some bursts, some recovery.

Now, that is again going to dilute some of the immediate pressure on our supplies and some of our more difficult distribution problems, such as, for us, Boston is a very difficult place to get new electricity supplies to.

As we move forward, we have to prepare but if we contrasted that forecast -- and I should have done this -- to what we came up with just a few years ago when economic growth was expected to be somewhat stronger, when we were talking about 3 and a half percent growth, instead of selling 20 percent more electricity in 10 years, we were going to be near 30 percent more.

Further, we were anticipating this sharp decline we have had at the end of last year and beginning of this year, so the pressure looked like it was going to build much sooner.

What does this mean for capacity? Unfortunately, when I did this plot, what I looked

at was our forecast of capacity in place. The problem with the forecast of capacity in place is that we include things that are actually going to come on line. This isn't a forecast of what capacity we actually need, but that expected to be up and available on line.

As you can see, in New England we will have quite a bubble of electric generating capacity. Given the last couple months and where we are this year, we anticipate some of the capacity will be delayed even though most of it has already -- most of these places have had groundbreaking, but we are anticipating developers will be slowing those capacity plants.

If you look at that, it gets back to that same basic thing. With the economic performance weak over the next year or two and finally recovering to about 3 percent per year, and that driving about a 1 percent rate of growth in electricity sales, we are going to need additional capacity that is between 10 and 20 percent more than we currently have.

Why is it that when you are going to need 10 to 20 percent more, maybe 30 percent more in New England, we are not anticipating over the next

decade significant increase in imports and we are anticipating there could be additional transfers from New England into the Mid-Atlantic region, whereas power normally has gone the other way.

What this says is we are going to, in some sense, build 25 percent more capacity than we had in the year 2000. That is pretty substantial. The question is how much of this is planned and nearsighted. It turns out the number between now and 2010 is a requirement for 10 additional gigawatts of capacity in the New England region. We have 10 additional gigawatts of capacity in New England that has been sited. In effect the slowdown of economic performance over the last few years and concomitant slowdown of electricity sales and even the more dramatic decline in manufacturing sectors has sort of brought a lot of the region into long-term balance and short-term surplus.

What the forecast is basically saying is over the next five years, with the completion of additional plants, we are going to be radically increasing our reserve margin both on base and peak basis. We are really kind of well suited here to take advantage of all the emerging natural gas supplies that are coming in.

What about the Mid-Atlantic region? There again we will need about 25 percent more capacity. Of the additional 15 gigawatts capacity that might be needed fully 6 gigawatts is sited. The rest of it sort of has been announced over time. So it is not really a generating problem in terms of we need to get plants up and running. But we have a lot of generating companies interested in siting plants throughout New England, New York and Mid-Atlantic. What this plot shows is we are really in a situation over the next 10 years where we are taking advantage of planned capacity and new capacity under construction. In terms of generating assets, looking more towards the next decade in terms of newly sourced or required additions.

The capacity picture, though, is not without its risks. One of the dramatic changes that occurred during the 1990's and sort of given us this rosy picture in terms of generating capacity is the fact that early forecasts assumed that most of our nuclear capacity would be shut down. Right now our nuclear capacity -- a small amount was shut down. Our nuclear capacity is running like gangbusters, averaging in New England 92 percent average rate of utilization in the last few years. So the sale of

nuclear assets to companies that specialize in nuclear generation generated a dramatic increase of utilization of about 62 percent to 90 percent. It is anticipated over the next 10 years we will be able to maintain that rate of utilization.

There are some real risks in the next 10 years which we must begin to consider post-2005. On the good side, though, certainly not too much in New England, but coal capacity represents a unique and perhaps underappreciated resource for us in the middle Atlantic region.

I am not sure how many of you are familiar with all the ins and outs of the Bush energy plan as we have come to know it, but I had the unique position of doing a full economic and energy analysis of the Bush energy plan for the administration last summer. So I am pretty intimately familiar with some of it.

One of the things that was not well understood during the 1990's or perhaps we lost sight of is exactly how much we can rely upon coal.

Why? Well, you know, we in the energy industry for more than 20 years have assumed we will be phasing coal out and coal will ultimately die. One, we have a boom of our source of natural gas.

But also, coal was environmentally problematic for us and the cost of fixing all the old coal units looked astronomical. Over the 10 years though, once we passed the Clean Air Act of 1990, remarkably, we came up with dramatic improvements in pollution abatement technologies that could be applied to coal plants. That equipment is very much less expensive than it was years ago, just a few years ago, actually, to install.

So, we are anticipating that all of the tangential capacity in the United States, roughly about two-thirds capacity, will be able to meet the zip call by 2004 or during that period for relatively low cost. Certainly less expensive than building new gas capacity. That wasn't always well known.

The second thing was essentially the outlook for new source review. The Clinton administration certainly tightened its interpretation of new source review, whereas the Bush administration announced they are essentially going to obviate new source review. So in terms of shifting from one to the other, dramatically it increased our ability to take advantage of coal.

Coal capacity, that two-thirds tangential

and wall-fired capacity today is running 90 percent utilization, more like a manufacturing number. The cyclones and old steam units are still running at 30 percent utilization, but that tangential and wall-fired stuff is doing gangbusters. We anticipate it will, certainly with this administration's outlook for new source review.

What does that mean? Over the next three or four years across the country, particularly true in Mid-Atlantic, all that coal capacity is going to have to be upgraded. Its maintenance -- we have underspent on maintenance in all our coal capacity for more than a decade. To meet the zip call we are going to have to upgrade capacity and invest in that technology. What does that mean? That we are going to have increase in coal capacity.

Estimates from various -- well, Edison Electric and a few other people said we would anticipate that all of the newer coal capacity, the stuff that is only 30 years old, could essentially increase its output somewhere between 15 and 20 percent based upon maintenance upgrades.

So, in addition to running coal capacity close to 90 percent average utilization, we are also going to be seeing over the next couple of years an

increase in the effective use, the effective size of our coal capacity due to maintenance upgrades.

So when we include that in the forecast, it also diffuses some of the pressure, particularly on this coming decade in terms of increasing capacity.

I am going to switch to the very last slide. What does this mean for natural gas? No, we don't have that many -- as I said, our population growth is relatively low and while we have increasing penetration of natural gas in the residential and commercial sector in New England, still relatively slow. Our industrial sector is all service, so it doesn't have a high utilization rate. What we are doing is putting our gas into power supplies. So as we look at the forecast there, we would say in the middle Atlantic region we anticipate some increased use of natural gas, but our forecast says we are going to be increasing coal use a good bit over that period.

New England, on the other hand, is investing heavily in natural gas capacity and shuttering some of its oil capacity predominantly due to the fact that meeting ozone regulations reduces the economics of reinvesting or doing

maintenance upgrades to your oil capacity.

So we do have a significant increase in gas consumption in the New England region as we shift predominantly out of oil and into natural gas.

With that, I would like to turn the podium over to Scott.

MR. SITZER: Thank you, Mary.

Good morning. My name is Scott Sitzer, with the Energy Information Administration, the statistical and analytical arm of the Department of Energy. We produce a number of reports and analyses over the course of the year. One of them is the Annual Energy Outlook, which some of you may be familiar with. That is the basis of what I want to talk about this morning. I have no slides, so I will try to go through this with as few numbers as possible and get through it quickly.

Basically, I want to talk about the northeast electricity and natural gas markets. What I am going to say basically echoes what you have already heard, which I think is that the biggest change to come over the northeast over the next decade will be the increased use of natural use oil for electricity generation and I think this probably is the most important factor or change we expect to

see in the northeast over the next 10 to 20 years. In general, you already heard the northeast is expected to have somewhat less growth in overall energy needs compared to the rest of the United States and Mary talked a lot about the economics that drive that.

Our forecast has the trends similar. Population growth is somewhat slower than the nation as a whole, ranging from two-tenths percent per year in Mid-Atlantic to four-tenths percent per year in the New England census division. In fact, as terms of overall economic growth we see this region as growing at about 2 and a half percent per year for gross domestic product, whereas the United States, as a whole, is expected to grow about 3 percent per year between 2000 and 2020 as the nation recovers from recession slowed output.

But as a result of the somewhat lower population growth and lower economic growth, we see electricity sales growing somewhere between 1.3 and 1.5 percent a year over the next two decades, whereas for the nation as a whole it is about 1.8 percent a year. This is lower than economic growth because of the increased efficiency in the use of electricity, more efficient appliances, saturation

of some of the other major appliances. But still it is a rate of growth that is going to need additional generating capacity in order to meet it.

That generating capacity primarily is going to be natural gas. Because of only moderate increases in northerly gas prices coupled with generally superior costs and certificate performance of natural gas-fired capacity, we expect them to be the predominant growth area in terms of new electric generation both in this region and nationally.

Currently I think we have seen that coal-fired, steam and nuclear power are the dominant sources of generation in this region, representing about 75 percent of the supply. Other fossil-fired steam units powered by petroleum and natural gas are also important, as well as hydro. But over time we project the mix of generation is going to move toward the natural gas area with the share of generation expected to increase from less than 9 percent today to just about 30 percent by 2020 and that is a very significant increase.

As a result, we expect adjustments in gas markets to accommodate this level of growth are going to be very challenging.

Again, new gas-fired turbines that

combined cycle units should meet about all the increased electricity demand in the region. About 31 gigawatts are expected to be built. We see about two-thirds of those being built in the Mid-Atlantic region, which stretches down to Maryland, with the balance split roughly between the New York and New England areas. We also see a good chunk of that being built in the next 10 years because that is where much of the increased demand is expected to be and that is also where we will see many of the retiring fossil fuel steam units occurring.

So this will certainly result in increased use of natural gas to about 1.3 trillion cubic feet by 2020, almost a four fold increase from what we saw in 2000.

We expect the use of coal, as Mary says. Coal seems to be hanging in there in terms of its importance to electricity generation. We expect about a 25 percent increase in coal demand for electricity, very little new coal-fired capacity, if any, but considerably greater use of existing capacity.

We also expect to see some slight decline in nuclear generation as some of the units, when operating licenses expire, decide not to renew the

licenses. We don't see any new nuclear capacity as a result of higher costs and other factors.

Probably a little different than the other forecasts, we see imports of electricity continuing to be important. Today they provide 10 percent of the load in New York and New England and we expect that share to remain the same throughout the next 20 years. Also, electricity is transmitted into this region. The largest trade occurs in the Mid-Atlantic with net imports of 20 billion from other parts of the country and we expect that to grow to 30 billion gigawatts. We see the level of net imports to New York increasing to almost 15 billion gigawatt hours by 2020.

In terms of prices, we see some decline in electricity prices over the next 20 years, both nationally and in this region, and in this region perhaps a billion more, as much as a half a percent a year between now and 2020. Today electricity prices in the northeast are about 2 to 4 cents higher than the national average depending on the area, but we expect to see a decline as new competition helps to reduce costs, the new more efficient gas-fired generating technologies come into play and coal costs continue to decline.

Looking specifically at natural gas, the growth in the electric generator section is clearly the driver here. We expect natural gas consumption in the northeast to increase overall more than a third between now and 2020 with the very vast bulk of that attributable to electric generation.

Natural gas has not been historically as penetrating in this region as it has in other parts of the country, primarily because it is geographically distant from the primary sources of domestic natural gas production. The question of where the additional gas is going to come is certainly very important.

We don't expect the primary sources of gas production in the U.S. to change appreciably over the next 20 years, so it is important to look at imports. The recent introduction of supplies into the northeast from Canada's ocean shelf has and will continue to change the dynamics of the northeast market in terms of our projections.

Production in the northeast is essentially confined to Pennsylvania, which currently satisfies only about 7 percent of the region's total consumption and is only expected to increase slightly by 2020. The remaining supplies

need to come from net imports from Canada and liquefied natural gas. We are expecting 1.6 trillion cubic feet increase on an annual basis from Canada over the next 20 years and about 700,000 billion feet from liquefied natural gas, a very large portion of that which is expected to come into the northeast.

We don't expect any new LNG import terminals to be built, but we expect expansion of some of the existing terminals, including the Everrett Terminal in Massachusetts, expected to nearly double its capacity and some growth in Oak Point as well.

In 2000, about 3.3 trillion cubic feet of gas was transported to the northeast via domestic pipeline. We expect that to grow about 25 percent with the incremental supplies coming almost entirely from Canada. The increased pipeline capacity into New England by 2020 is expected to be double and for the middle Atlantic region it doesn't need as much of an increase, but still to increase about 10 percent, which would be from about 5 TCF to about 5 and a half TCF coming into the Mid-Atlantic region.

On a national basis, we expect the average wellhead price to increase to about 2.20

cents per cubic feet in 2020, higher than today and expect the same basic pattern for end use prices in the northeast, as well as the national region, somewhat lower for the residential and commercial sectors and somewhat higher for the industrial and electric generator prices.

We expect to see electric generator prices in this region as over $4 per thousand cubic feet by the year 2020.

Just to summarize and close, we do forecast electricity demand is going to grow at nearly 1 and a half percent per year. We expect that to be met mostly by new gas-fired technology driving up the use of natural gas in the region by about 1 trillion cubic feet, decline in electricity prices, but increase in natural gas prices driven by that increased demand.

Thanks very much. I would be glad to take any questions.

SPEAKER FROM THE FLOOR: A question for Mary. Could you discuss in your forecast for new generation how that is influenced by the inevitability of retirements over the next 10 years and the difficulty, as none of it has been announced?

The second part, you showed a significant bump in the next several years with Wall Street's recent reticence to lend to merchant generation?

MS. NOVAK: We have in the forecast now the capacity already sited or had broken ground. Within the New England region that is about 6 or 7 gigawatts. We are anticipating that those plants will be completed between 2000 and 2005. That is that bubble of activity.

We do essentially begin retiring the old oil plants. Many of them have been mothballed. They rarely run anyway. They are basically winter capacity. So we do anticipate that sometime within the next 10 years those plants will actually come out of service. They could actually just sit there, as they have for the last 10 years, with very little utilization rates, but we are beginning to believe they are just going to be pulled out of service, particularly as we get enough natural gas in in the winter, so we don't have to rely so heavily on some of that oil capacity in meeting immediate winter load.

SPEAKER FROM THE FLOOR: Do you have any idea, statistically, what that retirement would be? Also, the second part was with regard to Wall

Street's reticence to lend to merchant generation.

MS. NOVAK: Most of the capacity that is in the early part of the forecast in New England has financing. We are talking about the fact that in New England we have a bubble of activity coming up or that we are in the process of completing right now over the next five years that has been through the planning stage and has quite a bit of investment, so that we have gone through and looked all the 10 or 12 gigawatts planned and said how much of this is actually pretty far along and has had some commitment. It is a pretty high number for New England and it is all natural gas and it is based upon taking advantage of the new line and the Iroquois line.

For this region we are not in bad shape.

The issue was, was that going to be sufficient. Well, it is now looking quite sufficient given the economic performance of the region, that we have dipped into a recession and that it is likely that in this region it is going to take us a little bit longer to recover. We will start to recover a little later and get going full steam a little later, so that the balance for the first five years looks pretty good.

I do want to clarify, one of the questions that has continued to come up is the issue of specific regional constraints, like the southeast Connecticut market and, as I alluded to, the Boston market. Those are different issues and have a different amount of level capacity available, but perhaps not getting the power to where the markets really need it.

MR. SAVAGLIO: My name is Alex Savaglio (ph.), Atlantic Energy. You had indicated you projected a half percent cost reduction on electricity per year and that that was due to shifting to natural gas and other measures. With natural gas, what did you project for increases as the consumption is going to be going up? What was used in your projections for the electricity going down and gas going up?

MR. SITZER: You mean the price of gas?

SPEAKER FROM THE FLOOR: Mostly on site generation for sources that won't have access to coal reduction.

MR. SITZER: I mentioned in this region we expect the price of natural gas generators to be 4.25 percent by 2020. That is real price increase, not taking inflation into account.

SPEAKER FROM THE FLOOR: Thank you.

SPEAKER FROM THE FLOOR: We don't have copies of the charts you presented, but if you see there some of the economic growth charts, for the last decade is going down. These are not quite consistent. We can't follow easily. Capacity and consumption is showed to keep pace. The charts you showed, you will see that the economic growth rate is not as fast as the electricity consumption. I wish you had the charts given to us.

MS. NOVAK: That was a little confusing. What I did in those charts was to show the five year growth rates. So there were three sets of bars. The first bar was '95 to 2000. The second two bars were the first half of the decade and the second half, so that non-manufacturing employment between 2000 and 2005 is going to be increasing over that period say 1 percent, and then from 2005 to 2010, it will grow at 2 and a half percent, that it is increasing monotonically during that period because those are average growth rates, whereas when you look at the plot that was indexed to 2000, it says what is the average growth rate year over year.

Even though we are going through sort of a recession right now, we are going to have some

dip. Over the entire period between 2000 and 2005, we are still going to be experiencing positive growth relative to where we ended 2000. Even though it looks like a dip, it is a different way of looking at it. I probably should have put everything on an indexed basis, so it would be more comparable.

MR. SITZER: I want to add that over time the energy GDP ratio is falling. We are getting more efficient in the way we use energy, more efficient appliances, saturation of major appliances. It is not going to be a lock step with economic growth.

CHAIRMAN WOOD: Let me ask this. The New England generation growth, the blue line on your chart, Mary, was pronouncedly above the national average. Does your study show any particular systemic regions why the generation of investment was markedly above the national average in this region? What are the underlying attributes that made that line above the average?

MS. NOVAK: There are two reasons for it. One, in this region we were one of the first regions to have a reserve margin go away. For those of us -- I have been doing this a long time. Back

in the eighties most regions had reserve margins between 25 and 45 percent. We were the 25 percent people and some places like the midwest were the 45 percent. The reserve margins were huge in certain regions of the country.

Over the last 20 years, we have been working off all that prebuild. So the New England market has now a reserve market we would like to sustain. We are about 14, 15 percent, I think, right now. On a planning basis we would like to keep 13, 14 percent. Other regions aren't down there yet.

That meant during the early nineties, as we saw that effect happening, we worried about two things. One, we needed to start building probably before the other regions to sustain a reserve margin of 13 or 14, but two, we had previous concerns we would lose all our nukes, in which case we would need to have a bigger build to replace capacity since we had a much higher dependence on nuke than some of the other regions.

Two things. Our reserve margin came down to what we would consider a point we would like to sustain, first. Secondly, we were worried about losing the nukes, which would then drop the reserve

margin. So we ended up with a lot of infrastructure planning during the 1990's and infrastructure spending that other regions haven't had. In fact, some of the other regions are building and at this point with the economic slowdown their reserve margins are going way up again, so they will be in sort of an overbuild situation already.

COMMISSIONER BREATHITT: Scott, I have a question. You mentioned in your remarks there may be some requirements for nuclear facilities in the northeast. Is the trend to re-license or is the trend to retire them?

MR. SITZER: I think the trend is probably to re-license.

COMMISSIONER BREATHITT: How do you know when a plant may retire? Do you find out from the company or from a press release? And how early? The hydro process is 10 years out. How early do you know that retirement might be planned versus re-licensing?

MR. SITZER: We are not so much relying on their plans or announcements as we are on economic analysis within our model. Our methodology, we try to compare the going forward costs of nuclear generation against replacement

capacity such as natural gas. The big questions are what will the going forward cost be? And over the past several years they have reduced the cost or reduced the gross in cost to such an extent it made re-licensing a more economical proposition.

We are more optimistic now concerning re-licensing than before. But we are looking at the economics and making assumptions about what the costs are going to be and in that way determining whether they are going to retire or renew.

MR. MILES: Thank you. Ladies and gentlemen we are about seven minutes behind schedule. We have a lot ahead of us today.

(Recess.)

CHAIRMAN WOOD: The purpose of today's conference is not to deal with any of the pending docketed cases such as applications involving hydropower, natural gas certificates or RTO proceedings. These matters will be dealt with on the individually docketed cases so all participating will have proper notice.

Administrative Procedure Act as well as Commission rules prohibits any discussion of the merits of these contested proceedings without giving notice to the other folks. I urge participants to

focus on the broader policy and agenda issues today and avoid discussing individual cases pending at the Commission. If anyone desires to participate in individual proceedings, go to our website for information about how to participate.

At this time I would introduce, and for the balance of the day, our very capable Mr. Rick Miles from the Commission's alternative dispute resolution staff, the head of that group. He will handle our moderation for the rest of the day.

Rick, it is all yours.

MR. MILES: Thank you, Mr. Chairman. Good morning. We have a very distinguished panel with us today and it is a privilege for me to be your moderator. We have an agenda. As the agenda says, the purpose of this panel is to discuss near-term energy infrastructure needs and adequacy of supplies. Some of the questions we expect the panelists to address: What are the high priority infrastructure needs for today? What happens if these are not built?

What I intend to do is ask each of the panelists to give up to five minutes, an overview of their presentation. Our goal, following the presentations, is to have an interactive session

among the panelists. I hope that each of them will seek clarifications of any points made by any other panelist. Of course, we encourage you to be brief and precise. Again, our objective is to create discourse, dialogue between each of you.

You do not need me to engage in a conversation, but if more than one or two of you want to speak, I will make a mental note of that and try to ensure that there is equal participation by all the panelists. With your help and cooperation, we will attain our goal and make my task easy.

I will have the first panelist give his overview, five-minute presentation. Steve Whitley, senior vice president for the New England ISO.

MR. WHITLEY: Thank you. The first thing I want to say is I appreciate the chance to be here today and talk about infrastructure in New England and let you know that the future -- the impression you might have got from the first panel seemed awful rosy. I am here to tell you it is not that rosy in New England.

I am responsible for system planning and system operations and market operations and we have some serious problems in New England, as evidenced by the summer we just went through. We went through

a summer where system demand was 2,500 megawatts higher than any previous all-time demand and our transmissions network was absolutely loaded to its limit.

A number of problems surfaced throughout the summer. The operators had to work around a lot of inefficiencies that were observed. As we look forward at the next few years, we see that those problems are going to amplify in certain areas. The number one problem I want you to remember about my presentation today is we have a serious problem in southwest Connecticut from the standpoint of reliability.

The first slide I want to show -- the other observation I want to make, I have been in this business 32 years now. A lot of the presentation earlier was based on of gross averages, that sort of thing. I like to use this term; the average depth of the Mississippi River is four feet, but when you try to cross it you are going to find it is not four feet all the way across. That is what we have on the power system. You can have lots of supply and it looks good on paper, but if it is not all in the right place, it doesn't do you a lot of good. That is the situation we have in

Connecticut.

We do have a good picture in terms of supply. To follow up some of the questions, why did New England get so many new facilities? I think they had some good answers there. Also, I think New England had gone through some very tough years with high power supply when the nukes were down in the mid-nineties and there was a healthy regulatory climate to attract and bring new generation into New England. There was a "can do" attitude to make things happen and it did happen and that attitude is still there.

That is the plus thing. The market obviously has attracted generation as well. If you look at the next slide, jumping over to the gas situation. Another question was how much of the new generation was peaking and how much was base load. Almost 99 percent of the new generation is the new combined cycle, clean, efficient, gas-fired generation, which in our case is wonderful from a capacity standpoint. But we actually are short of peaking capacity in New England. We actually would like to have more peakers.

We have had approximately almost 4,000 megawatts of generation added and we have 6,000

megawatts under construction right now. It has been our experience, as the previous speaker said, once construction starts, the project comes on line. It may face some delays, but, in general, it comes on line. So, within the next year and a half, we are going to have another 6,000 megawatts of generation coming on line, some of it in very good places and some of it in not so good places.

The good news is the supply picture, but the bad news is all of it didn't locate in the load pockets we would have liked for it to. A lot of that is siting issues, but, in general, the generation located in areas where there was easy access, where you can get on line fast and get into the market fast. That typically meant close to a gas pipeline, close to an existing transmission line.

We also didn't have a location pricing system at the time. We will have coming forward, hopefully by the beginning of January or maybe as early as December this year, to help send those correct price signals out.

With all the new generation coming on line, all being gas, and New England being sort of the end of the pipeline from the gas standpoint, we

were very concerned about the integration of all the plants into the gas pipeline system and commissioned a gas study last year to evaluate sort of the electrical network in concert with the gas pipeline network to do steady state analysis to determine are there going to be gaps in the ability of the gas pipeline system to supply all the new plants coming on line plus the growing residential use of gas.

When we did that study last year, we made assumptions. We assumed all the new gas plants that were under construction would get on line and that was a logical assumption. We assumed gas pipeline projects that had been approved and construction had started, they would happen. We made a model of the future looking ahead, trying to make sure that something is not coming at us that is going to hit us right between the eyes one day and we are going to wake up and say, "Uh-oh, we have a problem."

We did find some problems in the study we did last year and the problems were winter peaking problems, not summer peaking problems. New England is a summer peaking system. We actually have more margin in the wintertime than the summertime. For example, last summer we had a reserve margin of about 18 percent. This winter we have a reserve

margin of greater than 30 percent. But still we are concerned about those very cold days, what happens when there is a simultaneous demand for gas and all these plants end at residential customers. And we did find problems.

We have been working with the gas pipeline companies since then. We have had all the pipeline owners and their operators in New England come to our control center so we can explain to them how we operate and we have visited their control centers and developed some good cooperation and communications to try to anticipate these problems on a weekly, daily sort of basis. We also have updated that study for this year, taking into account the new additions that have made their way through the process, pumping station, compressor improvements, pipeline improvements and updated the study with the new assumptions on gas plants.

The problem continues to show up about two years out and gets worse after that.

A key finding in that area is that the gas pipeline companies can build things in about two years. Right now the generating companies are not contracting for firm gas. They are buying on spot market and the gas companies cannot justify capital

on spot market gas purchases.

MR. MILES: Maybe we can explore within the panel your concept about insufficient capacity for power plant use versus needs for residential use, which is an interesting topic.

Mr. Craig Frew is the next speaker, chairman of the New England Gas Association and also president of Iroquois Pipeline.

MR. FREW: Thank you. I will get right to the point. I believe the highest priority needs are in the transmission sector, both in the gas and electric sector, as the gas and electric transmission issues are becoming closely linked. Supply issues are a different issue and I think a lesser problem in the short term. The looming problem, I believe, is probably in the three to five-year time frame. We have currently very strong short-term price signals, but the real problem resides in the three to five-year time span. Natural gas supplies in the northeast have significantly been bolstered because of stable gas pipeline and LNG facilities, but significant amounts of new power are being added and there is problems getting that power to the market.

Transmission constraints are likely to be

very visible in short-term price fights on both gas and electric grids. So the solid growth everyone is talking about, the 30 MCF case by 2010 is attainable and sustainable and even highly desirable. INGA put out a very good study on that, updated recently. Virtually all the studies show that 50 to 60 percent of total expected growth in gas demand in the northeast is as a result of electric generation. That is 50 to 60 percent, a very high number. 80 or 90 percent of all the new generation will be from gas, maybe even higher than that. This is literally where all the problems are going to be generated in the future.

My theme is that good price signals and regulatory stability are going to be required to assure this smooth growth to the 30 MCF case.

The majority of transactions people look at right now are on the futures side for getting price signals, and I would say those are not good signals. You have traders that trade between themselves and they are not physical players. Traders only need to instantaneously balance their books. They rely on financial tools to resolve imbalances and long-term volatility in the futures market attest to the underreliability of those

numbers to forecast prices. Today there is hardly any price signals on the electric side. That is where one of the problems arises. We need strong market signals and we need a market driven approach.

We are partly there right now in terms of getting good market signals, but I think in some cases we have gone too far into deregulation. For example, LDC's are being told to get out of the merchant function and unbundling has occurred. I think that needs to be revisited. The bait should focus on encouraging a competitive marketplace whoever is involved and ensuring we have appropriate market signals.

This is a chart that shows a spark spread. I want to put this up because there is tremendous price pull we will see from the gas-fired generators on to the gas grid. If you look at this slide, it basically shows in the yellow we would expect gas prices in the 2 to $6 frame and they float around underneath. That line up there shows that say at $100 a megawatt hour you have the potential for say a $10 sparks grid. That means you will get a $10 price pull coming from the electrics on to the gas grid.

That is a huge increase in the kind of

price pull you will see. If you get up to 1,000 megawatt, you are looking at $150 MCF price pull. Those numbers are enormous.

What I am pointing out here, you will have a tremendous crowding out of the existing users of the pipeline network. This is a major source of concern for AGA members. To date new power plants have been reluctant to sign up for long-term capacity because they need to determine where their supply will come from and the price they will pay. We are going to be competing in the future, the gas industry, with electric in terms of building transmission facilities.

I have four key recommendations I would like to make and we can come back to those. One is that regulators need to let the LDC's back into signing long-term contracts, 10-year contracts and long-term electricity contracts. There should be a required showing of security supply for major buyers of electricity and gas. I am not suggesting a hundred percent of the peak be covered, but there needs to be some kind of showing of security supply.

We should require alternative fuel backup for all the power plants. Gas should have oil and oil should have gas and coal should have gas. I

think we need to move quickly to establish RTO's to get a comprehensive price signal working both the short and long term, but mostly in the three to five-year time frame because that is how long it takes to build facilities.

MR. MILES: Thank you. Our next speaker is from Quebec. Roger Lanoue.

MR. LANOUE: Thank you, Rick. Generally one can say that robust transmission infrastructure is necessary to sustain a healthy market and maintain reliability, especially under extremely adverse conditions.

Current electrical systems have been designed with a goal of matching demand and supply as close as possible and have been operated in a regulated monopoly environment. But these systems were not designed for a competitive market. To have true competition more than just one supply/demand combination must be possible. Competition can only be achieved if there are more plants, more transmission lines, or, more likely, a combination of the two. More transmission and capacity means improved reliability and this can be extremely valuable during severe contingencies, such as a fuel shortage and record setting cold spells or heat

waves.

In general, regions with high capacity transmission infrastructure have fewer reliability and market problems. To illustrate the point, we could look in the northeast. Quebec and Ontario have 735 and 500-kV grids, respectively. PJM has a 500 kV system. The three systems are each heavily interconnected with their neighbors and even more ties are on the drawing board. One seldom hears about reliability problems in these northeastern regions and the PJM market functions well thanks to a transmission system that can sustain a multiplicity of transactions.

In contrast, transmission is tight in New York and New England. This is where most of you hear about price spikes in the northeast, market power mitigation or brownouts. If transmission is not improved in New York and New England, electricity prices will go up as a result of the imbalance between supply and demand. There is also a risk that generation located near the load might exercise market power. Load curtailments would jeopardize public safety and the economy.

An efficient way to achieve better integration of transmission systems in the northeast

would be to optimize the operations of the interties with Quebec. The tie between Quebec and New York, which is operated at only 50 to 75 percent of its capacity. As far the nominal 2,000 megawatt Phase 1/11 tie between Quebec and New England, its current operation and rate pancaking are barriers to consistent flows of energy from Canada to the northeast.

In the northeast the largest problem is inadequate transmission between central and southeastern New York State, a series of transmission lines usually referred to as the Central-East interface. This limited interface has a negative impact on transaction between Canada and the U.S., not only with New York State but New England and PJM. Because Central-East is a weak link, some transmission facilities elsewhere must be operated below design capacity in order to respect the limits of inadequate portions of the system. Because of the limitation of Central-East interface, deliveries between New York and Ontario, Quebec and PJM are constrained. The situation is very inefficient and must be corrected.

A major transmission reinforcement of the order of 1,500 megawatts or more is needed. In

other words, another transmission project comparable to Marcy South, is required.

Long Island is a source of concern, but should have improved reliability once the cross Sound Cable project is in service.

In New England, some 345-kV reinforcements are needed to relieve significant congestion between Massachusetts and Connecticut and between Maine and central Massachusetts.

A few words on the financing of transmission projects and Hydro-Quebec's involvement. There are two categories of financing, roll-in treatment and merchant transmission. We believe projects are best suited for roll-in treatment when the large number of market participants benefit and there are many similar lines in parallel. The Central-East reinforcement and many other New England reinforcements fall into that category. These regulated projects could be developed by any number of technically qualified entities. Some other projects are good candidates for merchant transmission lines where the beneficiaries are clearly identifiable.

Projects to interconnect two regions or two systems such as the Cross Sound Cable or a link

between PJM and New York fall in the latter category.

Our subsidiary, TransEnergie U.S. are involved in such projects.

Hydro-Quebec hopes to operate a transmission system able to deliver energy where most needed. Maximizing the operations of the available transmission interties would go a long way in improving the reliability of the northeast grid. Thank you.

MR. MILES: Thank you. Mr. Eric Gustafson, vice president of Buckeye Power Pipeline.

MR. GUSTAFSON: Thanks, Rick. Buckeye is one of the largest independent pipeline companies in the United States and also one of the largest carriers in the northeast. The ability to supply fuels to homes and plants in the northeast requires production sources, refineries in the U.S. or abroad as well as terminals, ships, barges, pipelines and trucks to distribute them. My comments will focus on the pipelines.

Oil pipelines play a major role in the supply of heating oil to homes and power plants in much of the northeast. Pipelines also supply transportation fuels, gasoline, diesel fuel and jet

fuel. The slide Rick has depicts the major pipelines in the region. If you have a copy of the handout, you also see it in there. What is noteworthy is there are a lot of pipelines, but most of them are pretty small diameter. Also note that much of the region, including larger cities of New York and Philadelphia, are supplied by local refineries and import directly, not by pipeline. Also, New England contains new pipelines. The major lines that move product inland belong to Buckeye, Sun Oil. Colonial moves product from gulf coast to east coast, as far north as New York City.

Demand for heating oil in the northeast is expected to be declining as we look forward. Thus, pipeline infrastructure may appear to be adequate since it is getting the job done today. But it is not so simple. Heating oil does not move in dedicated pipelines, but in multiproduct pipelines. Growth in these products will squeeze oil pipeline capacity, not rapidly but steadily.

Demand growth is, of course, nothing new. How has the industry kept capacity in step to date? In recent years, the largest of growth in capacity comes from utilization of a chemical add in low concentrations, less than 15 parts per million to

the products shipped in most pipelines. This chemical, known as Drag Reducing Additive, is capable of increasing pipeline capacity by 25 percent or more. Most pipelines are now taking full advantage of this chemical and additional capacity growth is expected. There is one important exception. DRA is not currently injected into jet fuel. There is a research project underway sponsored by coordinating research council and the American Society of Testing and Materials that is aimed at gaining this approval. Support for this project, financial and verbal, will be very helpful.

Despite industry's efforts to increase pipeline capacity without major capital investment, many forces on this capacity are negative. Capacity is being eroded by the growing trend toward highly specialized fuels the industry dubbed boutique fuels, formulated to provide specific environmental benefits. The problem is the regulations are often enacted at state, regional or local levels which create new specifications for relatively small batches of fuel. For example, 25 out of 46 grades regularly used in Colonial pipeline result from regulations while only 25 from customer preference.

Much of the pipe in the ground in the

northeast has been there 40 years or more. While pipe with good coating and good cathodic protection will last indefinitely unless damaged by an outside source, until recently there was no practical way to observe the condition of the pipe. There are now detection devices, but following the inspection there must be repairs made to the places where anomalies are discovered.

A major problem facing pipeline operators is getting permits and approvals to repair or replace damaged pipe. Many carriers find themselves facing criticism from energy groups and state energy offices for slowing deliveries or ceasing deliveries, while at the same time being unable to obtain permits to make the needed repairs.

Pipeline security is another big issue facing the industry. Carriers have had security measures in place for years, but after 9/11 the standard for security has changed. Many law enforcement agencies are suggesting additional personnel and/or surveillance equipment as well as new fencing and barriers. How does a carrier justify that investment? The Commission approved index of PPI minus 1 will not be adequate. The industry has brought this concern to the

Commission's attention and we hope specific help will follow.

Will there be major new pipelines in the northeast? It seems unlikely. None have been built for many years. But remember the map. There are clearly places where new or larger diameter pipelines would improve infrastructure.

In summary, oil infrastructure in the northeast is adequate but aging. Capacity growth led by DRA has been replaced by capacity erosion due to pipeline integrity issues and boutique fuels. The Commission should ensure that it works cooperatively with the industry and other agencies to facilitate repair, replacement, security improvements and, where feasible, expansion of oil pipelines to continue to meet consumer and plant requirements.

Thank you.

MR. MILES: Thank you. Our next panelist is Eugene McGrath, chairman, CEO and president of Consolidated Edison Company of New York.

MR. McGRATH: We believe competitive markets in New York are working reasonably well. Market signals appear to be giving generators the

right signal. There is approximately 6,000 megawatts of new generation proposed for New York City. When we lost the Towers last year, we lost about 90 megawatts of load. Our peak last summer was just over 12,200 megawatts. We expect our peak this summer to be about the same, 12,200 megawatts.

Last summer was particularly hot and when we predict our peak for next summer, we base it on normal temperature. If we have the kind of weather we had last August next summer, we could be 3 or 400 megawatts above that.

We are also seeing -- it is early on and maybe somewhat of an anomaly, but our January numbers looks like load is growing faster this January than last. It may be an early indicator or it may be an anomaly we don't understand, but it looks like load is continuing to grow.

We have had a rule in New York for many, many years that 80 percent of the capacity we need to meet peak load be located in New York City. That is based on real world experience. We lost the city twice when we lost transmission systems.

I learned early on in my career how important reliability is in New York City. People don't like to hear this a lot, but I will tell you

the story anyhow. I was a new president. This is back in late eighties. I was in my office. We lost two of our networks in Manhattan. It is broken up into 30. We lost 2 of the 30. Within a half hour, I got the following calls. First from Dick Grasser, second in charge of New York Stock Exchange. He said, "Gee, what is going on? We are not so much worried about losing business today, but we are going to lose our business to computer exchanging, if there is impact on our reliability.

I got a similar call shortly from the American Exchange. Then the head of Federal Reserve in New York, and he said, "Gene, we are processing two and a half trillion dollars a day here and if we are out any length of time, there will be international monetary implications.

I got a call from Downtown Towers, a high-rise below the Brooklyn Bridge. A lot of old folks live there. The manager called and said, "We lost our water. If we lose electricity, we lose water for the high-rises. One person carrying water from the hydrant up had a heart attack and this can't go on."

I got a call then from the head nurse of Beekman Downtown Hospital in tears saying, "Our

nurses are manually keeping 14 patients alive through manual resuscitation. They can't keep going."

Then I got a call from the Fulton Fish Market. I started to interrupt him and he said -- I was going to tell him about the hospitals and banks. He said, "Young man, have you ever smelled 2,000 tons of rotten fish?"

That brought home clear to me. This is 2/30ths of Manhattan. Reliability permeates everything we do. We cannot afford to lose power in town. That is a threshold issue.

To deal with that, we need 3,000 megawatts over the next five years. That is roughly broken into three pieces, about one-third, one-third, one-third. One is to take care of the load growth we expect to get. One-third to take care of retiring some of the older, less efficient, environmentally inefficient plants that ought to be retired, and one-third to have enough capacity to let the competitive marketplaces work as they should so that -- we just can't have a match in capacity and load, that kind of competitive marketplace work.

Of the 6,000 I mentioned earlier, we think two-thirds of that is pretty sound. We are

going to go through a tough period, probably the summer of 2003, because it won't quite be on line yet. We need to do whatever we can to accelerate those projects.

I believe ICAP markets are essential to ensuring reliability and financing. We have needle peaks during the day and we are a summer peaker. You get a peaking plant built for financing markets and ICAP markets facilitates that dramatically.

Prior to deregulation, utilities balanced the needs between base load, peaking transmission and generation and transmission. Philosophy is ideal is the new competitive marketplace will take care of that. I am not so sure when it comes to reliability that that is going to happen. It may not be entirely achievable. A reasonable substitute might be an RTO planning process that considers transmission and load response projects and rather than ordering new facilities, the RTO/FERC could develop an RFP process with appropriate financial incentives.

I am running out of time. Thank you.

MR. MILES: Our next speaker is Douglas Logan, principal with Platts RTI Consulting.

MR. LOGAN: Thank you. Let's have a

look at the first slide. We have been tracking the power plant projects under development in North America since 1999. We have hundreds of projects adding up to about 600,000 megawatts in the interconnected parts of the U.S., Canada and Baja, California. Here we have summarized the development activity going on in four regions. At the top, PJM. Then New England, then New York, and at the bottom the Canadian parts of NPCC.

Here we have the on line year going across the bottom. Color coding indicates the status of the project. The darkest blue represents projects that have come on line since 1999. The next lighter shade is projects that are under construction. It may be that that bar is almost indistinguishable from the operating bar on the overhead, but there is distinction there. The medium blue is the projects that are in advanced development. The white bars are those in early development.

In our scheme a project moves from early development to advanced development when it passes any of the following three milestones, either it obtains all of its environmental and siting permits or it obtains financing or it obtains signed power

purchase agreement for a majority of the output of the plant. Once it passes one of those three milestones, we assume the other two will follow fairly quickly and the plant will go into construction.

Just eyeballing these four charts, you can see that the volume of projects that are moving along significantly is about the same in New York and in New England -- I am sorry. About the same in PJM and in New England, maybe a little more in PJM.

But the peak demand in New England is less than a half of what it is in PJM. So New England -- the New England development activity is a much larger proportion of the size of the region compared to PJM.

On the next slide you see a summary of status. About 7 percent of the 91,000 megawatts of total projects in our data base are operating. Another 17 percent are under construction, adding up to about 15,000 megawatts. We do have about 18 percent that have been tabled or cancelled and 48 percent that are only in the early stages of development.

Now, in fact, it may be that there are many more plants that we have still categorized as

early development that have faded away and might realistically be called tabled or canceled, but they just haven't showed up as such on our radar screen. That's gotten some attention in the past month or so, although to me it doesn't seem to be much of a concern given the amount of activity that is moving forward.

Let's look at the map at the bottom of the page. This is the result of an analysis we did of reserve margins, a snapshot in the year 2003. We don't know precisely what capacity is going to be on line by 2003. We don't know what the requirements will be by then. We don't really know what peak demand will be. It is affected by economic activity and weather conditions. We represent all of these uncertainties and we come up with a range and distribution of what the reserve margins may be in 2003 and that is what is indicated by the colored band in each of the thermometers representing the regions.

Look at New England. That range goes from about 27 percent up to 35 percent. The median is 29 percent. The little pointer is the target reserve margin. This entire range is above the target reserve margin, so the region looks pretty

safe. It is rosy. But as Mr. Whitley pointed out, transmission constraints are a huge issue here.

Take a look at New York. It turns out that the median falls right on top of the target. That is, there is a 50 percent chance that the region will be short in 2003. We are focusing on the southeastern part of New York here. We do expect that in western New York there will be a surplus, but that is meaningless to the people in New York City and Long Island because of the transmission constraints.

That, in a nutshell, is our view of capacity situation in the northeast and I will turn the mike back.

MR. MILES: Thank you, Mr. Logan. Our last panelist to speak is Caroline Petti, the special assistant to the Environmental Protection Agency, administrator for air quality.

MS. PETTI: As you might have imagined, since I work for the EPA, I am here to say a few words about the environmental issues that are always an important part of any discussion on energy. Many have characterized environmental issues as being a deterrent or at least undermining energy reliability, but I don't think that necessarily has

to be the case and I don't think experience has shown that it is the case. We now have over 10 years of experience since the enactment of the Clean Air Act of seeing emissions from electricity generation dramatically reduced and this occurring in the face of growing energy demand, growing population and growing GDP.

I know that the current administrator of EPA, Christie Todd Whitman, former governor of New Jersey, feels very strongly that we can have it both ways, that we can have both a clean environment and meet our energy demands at the same time.

It is no surprise to anybody that the generation of electricity does take a toll on the environment and on public health, from emissions of nitrogen oxides, which contribute to ozone air pollution, to SO2, acid rain, mercury, other hazardous pollutants, CO2. All these are taking a toll on the environment and public health.

EPA, using its authority under the Clean Air Act, has been regulating these emissions and attempting to bring them down for many years, always with a mind, though, towards assuring adequate energy supplies and not disrupting reliability to the extent possible.

With that in mind, that continues to be our goal and intention. I would like to touch on a few areas of emphasis over the next coming year.

Many of these spring from the President's energy policy plan that was issued about a year ago. The first, of course, is increasing, redoubling our efforts in the area of energy conservation and efficiency. This means we are going to be continuing and increased ramping up our energy Star programs, and also doing what we can to encourage the development of cleaner and more energy efficient technologies like combined heat and power.

Secondly, we will be examining permitting issues that are associated with energy use and development. We are participating in an interagency task force being run out of CEQ to look at these issues across the energy sector and, of course, there is our now infamous review of the new source review program, the NSR program.

This is a major permitting and pollution control program required under the Clean Air Act for major new sources of potential pollution and also not just new sources, but modifications to existing sources that may lead to increased emissions. We are looking into the various permitting issues that

have been raised, concerns that the way the new source review program is being run could be deterring moves toward cleaner, more efficient energy.

We expect to issue a report to the President in the very near future on that and whether changes should be recommended.

Last but not least, another major focus of EPA's Office of Air is in the development of what's called multi-pollutant legislation. This is also a directive of the President's energy policy and it involves attempting to take a coordinated, comprehensive approach to regulating emissions from power plants. We are interested in nitrogen oxides, SO2 and mercury.

The President already stated and made it clear that carbon will not be on the table, but we think that there are dramatic health benefits that can be gained by regulating the three other pollutants that are major from this industry. So we are looking at establishing caps or limits on each of those pollutants and then a program that will be modeled after our acid rain program of allowance trading to ensure the flexibility implementation of those caps. We think that if the caps or limits are

set low enough, that this will enable us in the future to do away with some of the uncoordinated regulatory requirements that now apply to the industry like NSR for existing plants, like some of the requirements under our regional haze and visibility program, acid rain, mercury max standard, and so on and so forth.

With that, I think I will shut up and have a discussion.

MR. MILES: Thank you, Caroline. What I would like to do is have the panel engage in a discourse, conversation about the very topic of the panel, infrastructure needs and adequacy of supplies. If I were to spend a lot of time with you, I would have flip charts here and start to put down bullets. But just to get the conversation going, what I hear in the presentations is that you have needs, capacity needs for natural gas, not only for -- as I understand you have a competing thing going on for generation use and residential use and also a need, as Roger mentioned, for transmission lines.

Part of it is, we want to say what are the high priority needs in the near term? Make sure when people walk away, what are the high priority

infrastructure needs today and what happens if they are not built? It we can have that conversation? Anybody would like to start it off?

MR. WHITLEY: I think I kind of covered the gas pipeline issue. I want to talk more about transmission right now.

The big issue for New England is the infrastructure to move the generation around. We have got the plants coming on line and that has been working great. But we need the infrastructure to move the generation around.

In southwest Connecticut the number one reason is reliability and health and safety of the public. Number two is efficiency. We project a $300 million a year cost for inefficient operation because of running old units out of merit in Connecticut when you have brand new low cost efficient gas units elsewhere in New England. And competition is another reason.

Transmission enables competition. Other alternatives are also needed, but transmission enables all of those. In fact, a transmission project has been proposed by NU for a 345 kV loop for southwest Connecticut, but we can't enable getting that done tomorrow. It is going to take

time. So DSM, distributor generation, other things need to get done to help us get by until transmission can get into Connecticut.

Other transmission problems in New England are bottled generation. This past summer when we and PJM in New York were experiencing those demands, and had all units running, I think we had one unit off in the pool, which is amazing. Just tremendous availability, but we couldn't get all the generation out of Maine into the pool. 800 megawatts were backed down in Maine. We calculated what that cost on a two-week period and it was $80 million.

Working with the transmission owners, looking at alternatives to mitigate that problem, coming up with solutions in the 20 to $40 million range that solve it for a long period of time, not just a two-week period.

We see infrastructure on the transmission side is something that can bring a lot of value, integrated with all the other alternatives that we need to stress as well like DSM.

MR. MILES: Craig, do you have a comment about the gas, the need for gas generation and adequate capacity versus residential? Maybe I can

turn to Gene. Con Ed faces that dual competition right there.

MR. FREW: I would like to ask Steve one question. Take southeastern Connecticut as an example. What would be better? To build a new gas-fired generation plant right there where the load pocket is, and we will build a gas transmission facility to that spot, or are you better off having an electric line built into that area? That is my issue. That is, there is competition between the electric and gas. Which is better? How are you going to get them built and who are you going to get to pay for it?

MR. WHITLEY: Just take anything I can get. Our backs are against the wall. If you have seen "Oh, Brother Where Art Thou," we are in a tight situation. We need a supply and transmission enables supply to come in. It has a lot of value in many directions. The thing is, we have capacity. We have generating capacity in the pool. We just can't get it there. In this particular area problem, transmission seems to be a very logical solution to get the infrastructure. We are serving this area at 115 kV.

This is a major populated area. We talk

about 2 percent -- 1 percent load growth in the whole pool. The State of Connecticut has grown 25 percent during that same period of years and southwest Connecticut has even grown at a faster pace. When you look at average growth, the transmission system has to serve pockets of growth that may be growing at a higher rate than the average for the whole group.

CHAIRMAN WOOD: To cut to the chase, what is the obstacle to upgrading the 115 system to something greater?

MR. WHITLEY: Time. Well, the process is working. The utility NU is proposing, a 345 kV loop is going through the state siting process right now. That is all laid out. All the alternatives are being looked at through that process. But based on just working that process and all the complicated work that needs to be done, the best schedule is still the first leg of it, 2003, the loop completed in 2007 because it is a very congested area. Even though we are talking about 99 percent of it being on existing right-of-way and changing out towers to high voltage construction, it is very complicated, going to take a lot of time and there certainly will be opposition from various segments. We know that

already. It is very complicated and going to take time.

CHAIRMAN WOOD: How, if at all, does the "Under the Long Island Sound project" assist? Was that meant to bring power in from Long Island?

MR. WHITLEY: It allows power to flow both ways. In this case it provides some benefit, but not significant benefit to this particular load pocket.

MR. McGRATH: One of my concerns is our increasing dependence on gas. We can't forget that. If we ever learned anything over the last 50 years, we used to rely on coal and we got into trouble, relied on oil, had the embargo, relied on nuclear -- now we are going down the gas reliance road and we have to be very careful about that.

Transmission, if we can suddenly find 4,000 megawatt transmission line of nice cheap energy coming into town, that would sound like a dream. But I have to operate the system as if I lost that 4,000 megawatt transmission line. I almost have to duplicate that in our infrastructure to be able to deal with the loss of that line. So it is not just the project itself. It is the reliability issue of being able to stand a loss

without losing the city. I got some problems.

With regard to what will happen if we don't get the capacity? What will happen? First pricing -- first thing we will see is price spikes if we don't get the 3,000 megawatts I talked about earlier. We will lose the environmental and efficiency benefit of retiring some of the older plants we have and then we will start impacting reliability.

When reliability starts to get impacted, restructuring will be blamed for that happening and we will be back at ground zero again. We need to get ahead of the curve. We need the capacity and need it now.

CHAIRMAN WOOD: What obstacles exist that we or somebody here can do something about?

MR. McGRATH: Carry the message that we do need capacity. The economy has been growing. We do need to be ahead of that curve. Carry the message as to what is going to happen if we don't have it. Everyone understands it conceptually at some level. It breaks down right at your backyard. That is where it breaks down. I think FERC and the federal government need to step up and try to deal with that process better.

MR. FREW: Clearly one of the problems is on the gas and electric interface side. The generators are not signing up for long-term capacity on the grid and they are sitting there expecting to draw large amounts of gas when the need is there. That is not going to happen because on the pipeline side, the pipelines don't have the 27 percent reserve margin. They are fully contracted.

Unless somebody comes to us and wants to sign up for 10 years, we can't afford to build that. We can't afford to take that kind of financial risk. That is one of the problems today. With the Enron situation and everything, a lot of people that were proposing these power generation plants that were pretty bold six months ago are running to the hills. There were a lot of these people that were signing up for maybe not all their capacity, but some of the capacity to fire their plants, and that is not happening now. That is why I am on the bandwagon and we need to have some price signals.

We really need to let the historical major users, the LDC's, gas and electric, come back into the business. They are the secure kind of financial companies that can underpin the transmission facilities and the gas facilities. So

the message would be, let them come back in strongly and that is a message to the state regulators, really. They need to be back in because there aren't other players there to pick up that slack.

MR. GUSTAFSON: Following up on that, the pecking order seems to be kind of rateable fuel supply for the power plants and a lot of that is becoming more and more gas. Then you have peaking needs and a lot of that is becoming more and more gas. Both Gene and the earlier speaker mentioned the need for multifueling to have the ability to have oil there.

One of the main problems that we face is how do you justify building infrastructure for a maybe? It is the same issue as the peaking on the gas, but one more step down the ladder and one of the things I think needs to be addressed, how do you get people to build infrastructure that may or may not ever be used?

CHAIRMAN WOOD: Eric, are any of the new gas plants doing fuel backup?

MR. WHITLEY: Yes, many of them are, but many don't maintain a large supply of oil. But they at least have a couple days supply of oil, most of them. Some states in New England require that.

MR. GUSTAFSON: I think there is a lot of requirements in that direction. What we don't see is necessarily a plan to maintain them. If you would be using the oil, how would you maintain it for two weeks or two months? It seems to be more of something to get us through X number of hours, but not a long-term infrastructure solution.

COMMISSIONER BREATHITT: I was going to ask if anyone on the panel had been thinking about a big difficulty we have at FERC, which is siting gas pipelines through congested areas. We had the one going through New Jersey. We have got pending applications that go through congested areas. Of course, we can't site electric transmission lines, but if you have any suggestions for siting through congested areas, we'd love to have them.

MR. McGRATH: I share your concern. Under the old rules -- we might have to create a utility again. Under the old rules, the planners of utility looked at load growth and said, "How do we meet it?" We meet it with generation, we can import power. If we meet it with generation, what are the problems of transmission? They wrestled with all these issues in totality and tried to come up with the optimum solution, considering all aspects of

this, and then that was reviewed by the regulatory agencies.

Well, we are past that. We are down the road. Now we have come to competition is going to drive this. The problem I see is we deal with these things on an ad hoc basis. We deal with one element at a time. If we optimize each element, does that mean we have optimized the whole? I don't think so.

We have a very serious problem here and that is why I suggested earlier that there be a planning role for the RTO that kind of looks at the whole picture and puts some sense on the whole picture because that is now absent, I think, in this kind of approach.

COMMISSIONER BREATHITT: Because of unbundling and because we have all the sectors now it is not looked at as comprehensively?

MR. McGRATH: That is the case. I believe utilities ought to be back in the market for transmission required for reliability purposes. That ought to be through this process and utilities for reliability transmission ought to be the right of first refusal on building that. That very much requires integration with the system and a look at all aspects of this. Any economic transmission,

that would go through the regular process.

MR. MILES: Caroline, we have heard some statements from the panelists about the needs, pipeline and transmission capacity, near term needs, that transmission constraints and your concern or statement about how you need to take a look at emissions, but where to site plants and whether it is better to build a pipeline or transmission line. How is EPA integrating all that in its analysis?

MS. PETTI: I think my reaction to this discussion thus far is, I would like to strongly iterate the first item on the list there about the need to assure that generation can be moved, properly moved around. That is an interest of ours, particularly when it comes to smaller, more environmentally efficient sources of power, which we would like to see come on line increasingly so.

As I understand it, there are some issues associated with access to the grid and connectivity that I think some of our folks in the Air Office are talking about trying to correct. I would strongly iterate that that is an interest.

MR. MILES: Roger, you mentioned transmission lines, but it seems your interest is not so much near term or long term.

MR. LANOUE: Two or three points. One of the needs I identified is decongesting Central-East constraint. If that were done it would add 1,500 megawatts at least capacity east of that constraint for New York City, I suppose, and the surroundings, including southwest Connecticut.

Now is that something the Americans want? That is, I guess, for people here to decide, rather than us, but given the capacity that we have, Canadian capacity from Ontario or Quebec or even Labrador could be available given the present interties. I guess the second part of the -- the second contribution I could make is that one of the ways to go around congested areas is underwater transmission lines as being proposed in different places, using Cross Sound Cable or a path in Atlantic Ocean.

COMMISSIONER MASSEY: My agency has no authority to site electric transmission, but my question relates to what do you see our role? If there are serious problems related to transmission infrastructure, be very specific about what we can do. One thing we can do is ensure that people want to invest in transmission, make it a good business. I think we are moving in that direction.

We had an order on the agenda yesterday involving the midwest ISO where they had proposed a 13 percent rate of return for transmission and we said that may very well reasonable. There were other reasons why we needed to send it to a hearing. But I think we are moving to make transmission a better, more attractive investment. Number two, we have approved some more creative pricing mechanisms for some of these new merchant transmission projects, which I think the industry finds very appealing. So we are doing that.

Number three, we have the RTO planning process, which is a long-term goal, but my view is that will help create more of a stronger political message for the region as a whole about the necessity for transmission investments when that is the best alternative for the region.

Being very specific, other than hosting conferences like this in which we talk about it and bring in our fellow commissioners at the state level and have them weigh in and this and that, what else can we do? What would you recommend?

MR. WHITLEY: I will start with the siting. I came from TVA for 30 years before I moved to New England. We had the power of eminent domain

there. We were able to get transmission built. It was sometimes controversial, but we were able to build it when justified for reliability and for economics at times. In New England, I am not seeing, though, that siting -- the state siting process in Connecticut seems to be working. We were able to get transmission built into Boston the last couple of years, which is mainly substation work, but it increased transfer capability into Boston. But it is getting the projects forward, through the planning process and having the incentives to do other than just reliability kind of projects that are "must do."

I strongly support the idea of the ITC thing. In our earlier filing, we continued to support the idea of a ITC to get some sort of incentives to help get new infrastructure out there and help operate the infrastructure better.

When we disaggregated, you have a wires company that has got the job of maintaining the system and their job is to do that at the lowest possible cost and to make money. For example, they have got a job to be done, they get approval to do it during the week. They are trying to reduce their cost, their overtime. Sometimes it is important to

get that line back in service not just for reliability but for efficiency, and they don't have any kind of signal to do that. We have to in the present world ask them to do that. Many times they cooperate very well in New England, but they don't have the financial incentive to do that sort of thing.

That is where I believe the ITC concept has real strong merit in the operational and planning process. The idea of the ISO, RTO being ultimately responsible for the planning process is right, but I think the ITC brings a lot of value as well.

COMMISSIONER MASSEY: Gene, do you have recommendations?

MR. McGRATH: Three things. One back to this making sure. We can't afford to make bad investments here. We are all going to go to the same capital markets for the money. We, for example, will be spending $1.4 billion this year on a capital program about two-thirds of which is distribution. But if, for example, there is no sense to this whole thing and people go out and build things that don't make sense, it is going to be harder for everybody to go to the capital markets

and get the investment in infrastructure that we need. That balancing piece is crucial. Are there adequate returns so you can go with the capital markets and get the investment? That is important.

The other thing, I think it is really important that we deal with the seams between the regions. Wherever these RTO's end up, we can't give up there. The seams between the regions are vital.

COMMISSIONER BROWNELL: Rick, I want to be sure our colleagues from the states know that they are invited to ask questions and indeed encouraged.

Chairwoman Helmer?

MS. HELMER: Thank you. Steve, you mentioned the regional transition planning process. Can you tell me the timetable and whether it would address such issue as the Central-East constraint mentioned by a number of the participants?

MR. WHITLEY: We have published our regional expansion plan for New England and it is posted on the web. It evaluates the capability of the infrastructure in New England to serve the load and integrate the new facilities into the system. It is more of a New England focus in terms of where are the problems in New England.

Working that process wider than New England, there is a NPCC working group looking at a New England, New York, Canadian utilities and PJM, looking at, in particular, the impact of Central-East and what improvements could be made there to allow greater imports into the northeast from Canada.

Those studies are still underway and aren't final, so I can't report on those now. The R tech for New England is well documented and talks about the load pocket problems and prioritizes them and quantifies the cost looking forward.

MR. MEYERS: I am Ed Meyers, DC PSC. I would like to follow up on Mr. McGrath's comments regarding comprehensive planning and what can be done to stimulate that, particularly at the regional level.

As you pointed out, the States used to do research, where we balanced out the supply against demand and came forward with a plan in conjunction with the utilities and all the other parts, a way to move forward rationally over time at the least cost. Now we are moving beyond that, as you pointed out. On the electricity side, we have generation supply considerations, transmission considerations, all the

things you have talked about this morning, as well as demand responsiveness, end use energy efficiency and environmental planning, as Caroline Petti discussed.

What types of mechanisms -- I can see a way the states can work with the RTO's, ISO's this having a planning body. You also mentioned the FERC. Is there any stimulus you can see to get this whole planning process started for you and anyone else who wants to join in?

MR. McGRATH: It seems to me the stimulus is that we are going to be measured against is a system that was in place 100 years. What did it do? Provided the most reliable energy system in the world, relatively stable prices, not hugely volatile prices; least cost planning, kind of an overview looking at all aspects, and that was in existence and that is our standard that this new competitive world has to compete with. There is a record of that. At the end of the day, we have to say, "Did we do better?"

My suggestion might be that the market participants, all of them, propose projects, they propose them to the RTO, let's say, they evaluate the proposal, identify reliability gaps, et cetera,

propose reliability projects. The RTO issues a plan and monitors the plan of the project. With reliability related projects, the utility, transmission owners in a local area get the right of first refusal to install that. The others, market funded projects proceed with contracts subject to FERC approval. That will require all the parties to play in that together. We need some organization, it seems to me, charged with looking at the overall picture.

MR. MEYERS: You didn't mention the states for the public interest role in here.

MR. McGRATH: My boss is sitting next to you so she certainly has a role. Since the federal, state, local kind of issue, where do we get the oversight to look at the whole picture? We have taken that away here now. We have dispersed it. I came here as much for answers as I did solutions. But that is an issue we have. I don't think there is anyone looking at the overall picture. We haven't heard about distribution here. It is critical, but that is not the responsibility of this group.

MR. MEYERS: We have been talking about this for a while now. We have been talking about

forming an organization of the state commissions working with the ISO in whatever further evolutions take place there to have exactly this type of planning process.

MR. McGRATH: We have in New York State the New York State Reliability Council, part of the ISO. I think that is absolutely essential and I understand there is discussion now between the new GSBY and NARUC and who should have the market rules, what should the role of reliability play there?

It comes down to the end of the day, the threshold was we wouldn't diminish reliability of the United States energy system. That is a threshold issue. It seems to me there has to be a real player there. That may be NARUC in that case and then make all the market rules subject to that threshold.

MR. FREW: I would like to comment here. This is a level below the electric grid issue. If you want to ensure reliability on the electric grid, which is linked to the gas grid, when the states certify gas generation they should require they have long-term supply of gas. If you don't have that, you don't have any reliability in those particular units and that is critically important. You can

have a two-day backup for oil, but unless they can show you they have a long-term supply, you won't have reliability of those units.

MR. ENG: I am Larry Eng from Niagara Mohawk? We are the transmission owner, which owns the majority of the Central-East transfer facilities.

As far as reinforcing the interface, there are three major impediments or problems with reinforcing that. The first is financial. At the moment the rent tariffs do not provide the economic incentives for us to fund a reinforcement. We have been trying in New York power pool, New York ISO to develop a transmission cost allocation fund, which would try to allocate the cost of the reinforcements to the parties benefiting from the transmission additional capacity, but since 1975 transmission cost allocation funding working group has not successfully come up with a mechanism to fund these things.

As far as the benefits go, the economic benefits of the new transmission facilities do not accrue to the customers of Niagara Mohawk but to the integrated systems, New England, southeast New York. As far as our customers upstate, because of the

additional transmission capacity, the LPNP prices of the upstate areas would go up rather than go down. But the customers, load serving entities downstate would benefit interest additional economic benefits of the new capacity. This is where you need to focus on who is going to get the benefits of the transmission facilities and locate those costs to those beneficiaries, rather than the costs to the local load serving entities.

CHAIRMAN WOOD: You are estimating a total project cost, Mr. Eng, of what ballpark.

R. ENG: We have been studying possible reinforcements. Anywhere from 100 to 200 million. It is not like we haven't been studying the problem. We have been studying the problem since the New York power pool was established. I have been citing it since 1975. We have been through integrated planning.

And the other alternative is that if generation capacity is built in southeast New York or New England, then the necessity for the transmission capacity across central region goes down. And New York ISO completed a generation adequacy study last year which indicates that if this 10,000 or 20,000 megawatts being proposed in

eastern New York and New England gets built, the Central-East transfer will become less of a constraining system in the future than presently.

We are taking a look at the CP 10. Working group of NPCC is trying to take a broad perspective of the bottlenecks within the northeast and come up with the benefits and identify which of the bottlenecks would be prioritized as the most important facilities to be addressed as far as increasing infrastructure. At the moment we identified about 1,000 to 5,000 transmission bottlenecks. The next step is by June we expect to come up with a prioritization of those.

MR. MILES: We have about seven minutes left. There are a number of hands. Keep the comments short.

SPEAKER FROM THE FLOOR: I notice the title of the panel is about infrastructure needs and I notice that I think the New England ISO person spoke about using DG as something to get by, by that I mean distributed generation.

Shouldn't it be part of the infrastructure we are looking at, not just to get by, but as really a permanent part of it? I know specifically New York City for Con Edison there is a

lot of distributed generation that is in control of a lot of the large customers within the city. I would like a comment from the panel. Thank you.

MR. WHITLEY: ISO New England agrees. All of the above. Both short term and long term.

SPEAKER FROM THE FLOOR: There was an important panelist called increasing transmission capacity without capital intensive means. This was set up because FERC gave an order last May 16th incentivizing transmission owners in the west by applying so-called non-capital intensive means. There were several techniques discussed on the panel, all of them applicable within short time frames, talking about months instead of years. Individually or in combination, they can increase transmission capabilities from anywhere from 10 percent to 60 percent. I do think that some of this could be applied here in northeast. They are much more applied now, for example, in the west.

MR. WHITLEY: I would like to comment on that one. I agree with that. We actually had the high voltage test facility for EPRI in New England near Lenox and invited EPRI over to talk to all the planners, designers and representatives from the TO's and ISO's of New York and New England at PJM to

visit and have EPRI go through and make presentations on what the latest technology was, what things could be put out there to quickly -- like real time monitoring of SAG, conductor SAG and so forth. Also, what are the new conductors there today that can be put on existing towers and improve the capacity? What is the latest state of the art in solid state devices? Those are very important.

I want to point out one problem in this area with deregulation has been funding for research because when utilities were vertically integrated, they had large budgets and were able to find money to fund research like at EPRI. If you look at the funding over the last two years at both DOE and EPRI for research in the area of grid operations and planning and also transmission and substations, you are going to see the funding has gone way down and that is a serious concern.

MR. MILES: Based on the level of interest expressed by the show of hands we will go an extra 15 minutes.

MS. PHILLIPS: Marge Phillips. I have an infrastructure question. I would love to hear whether you think we are putting in the right kinds of generation. By that I mean the balance between

peakers, base load, black start. We heard generically there is generation coming in, but are we meeting what you need from a system reliability perspective?

MR. WHITLEY: I can answer that from New England. While I wish we had a bigger percentage of peakers coming on line rather than all base load, and we think that is mainly because of the market designs we have had have not been correct to send the right price signals to attract peakers who can only operate a few hours of the year. We are making some improvements in those areas. We are fortunate to be getting 500 megawatts of new peaking generation in Wallingford, but still we don't think the existing market signals we have have been working properly. Reserve markets are very complicated. I equate it to trying to solve three equations and having four unknowns. That is something I think the FERC standardization process that is going forward now will bring a lot of fruit to that so we can improve those market signals and send the right signals to attract really the low cost options which are peakers.

But New England is relatively short of peaking capacity. New York actually has quite a few

peakers on their system and they are actually on the New England side of Central-East, which is real positive. And the reserve sharing agreement New York and New England worked out last year has taken advantage of that and reduced inefficient operation in both systems the last year.

MR. LANOUE: I could add that the design of the Quebec system can surely help in terms of peaking facilities available to the northeast.

MR. MILES: Doug, any comments?

MR. LOGAN: To the extent that the older oil or gas-fired units that are being pushed out of the market for intermediate purposes by the new combined cycles coming on line, to the extent that these units can serve more load following and peaking needs, the need for new peaking capacity may be somewhat reduced.

MR. McGRATH: I think it is important for the ICAP market -- it is important to have a ICAP market to finance the peaking projects. But this is an ideal opportunity for the demand side management projects. Peaking is where it is at. This is an ideal spot for DSM to compete in the marketplace in those kinds of programs. That has got to step up, I think.

MS. BERNARD: I am Karen Bernard and I have two questions about gas transmission lines, both of which I would like to address to Mr. McGrath, basically, because you are the panelist closest to the ground on issues here in Hudson Valley and southeast New York.

Given there are a number of gas transmission lines already in place, Iroquois, Algonquin, Tennessee, and some more coming on -- can you explain whether it is feasible to extract more carrying capacity out of the existing lines infrastructure, rights-of-way either by installing larger diameter pipes or enlarging the trenches and putting multiple pipes in them, number one?

Number two, while I recognize that infrastructure, specifically the pipeline and rights-of-ways are valuable assets, can you also address the question of whether it is possible for federal government or its agencies, like FERC, to require pipeline owners to share the infrastructure and rights of way.

MR. McGRATH: That is kind of a big question for seven minutes. Everything you talk about is theoretically possible. All of this goes to having proper planning and analyses and finding

out which options are the better options considering all the issues. I know we are now involved in a mediation process surrounding the Millennium pipeline, so I can't talk about that. I think that is February 17th. Rick is actually the mediator.

I think it goes back to planning. It goes back to seeing the big picture and to considering all the options, what is the economical, environmental, practical thing to get done. Presumably, that is done in these processes.

SPEAKER FROM THE FLOOR: I am from New York Power Authority. Everything I heard today is basically what we have been saying all along. The issue of reliability is tantamount in the transmission system and the restructuring of the industry. But the major issue here, I think Mr. McGrath hit on it, as everybody tried to run into the restructure, you have people listening to a market signal -- everybody answered the same bell.

The problem is, I think you may have too much in one area and not in another. One of the ways to get around this -- what we lost is coordinated planning. With the New York power pool and others, we are getting to the point where all the utilities were able to work in a coordinated

effort to get the best plan for the total benefit to the industry. What you have lost in this process is that.

What I meant by what Mr. McGrath said, if you go in an RFP, if you determine you need 30 percent reserves to make an adequate market, then that is what should be bid. You should say in certain time frames, do an RFP, that you need this generation and have everybody come and bid for that and build only that. In that way the infrastructure people can get involved with determining where is a good location to build it? Where is the gas? Where is the right for transmission? Is transmission in competition with the generation and can it be built instead of building new generation in this location?

That would hold the prices down and still have enough for the market to make adjustments. Right now you have too much in one area. As pointed out by Mr. Whitley, if you can't get it where you need it, it doesn't do you any good. Bottled generation is a problem.

SPEAKER FROM THE FLOOR: In the matter of energy security, in the post-9/11 phase we are in now, I would suggest that transporting gas, hydroelectricity from Quebec, long distances,

wouldn't be a good idea. So far we haven't heard Grenoble portfolios in energy, such as solar and wind in this discussion that I think should be part of the overall planning process.

Mr. Hydro-Quebec? If you were successful in lobbying for the bottleneck issues to be removed, I don't feel that it is safe to have energy coming down thousands of miles from Quebec to New York City.

Thank you.

MR. McGRATH: On the security, 9/11 has made a big change in one respect. We are going to have to make investment in our infrastructure that is not supported by additional kilowatt hour sales. We will have to put redundancy and flexibility into the system. The big issue in town early on was getting the world financial markets back up. We were only able to do that because we had certain resiliency in our system. We are going to have to invest in additional infrastructure to provide that kind of flexibility that we need to respond in case of a natural or man-made kind of crisis that won't be supported by kilowatt hours.

MR. ERD: Ron Erd from Mirant. I heard a lot about planning and the challenge we have in

the electric system following unbundling. I wonder if Mr. Frew can tell us about how the gas industry has been able to build out significant amounts of infrastructure in the 15 or so years since it has been unbundled.

MR. FREW: That is a tough question. On the gas side, I think there was enough of a surplus around. The unbundling was to create a whole bunch of competition with more players and that has happened and there has been a lot of new players brought into the industry. That has started to generate new infrastructure. People like Mirant and others have gone out and secured additional capacity.

I personally think it could happen. I am a strong believer in market side drivers, if you want to call it that, rather than central planning.

I do think that you don't need 100 percent of the market either pinned down one way or the other, the firm contracts or wide open, but you want a market that encourages a big chunk, maybe 20 or 30 percent, of the market as floating. Then you get these market signals and the industry does respond to the market signals.

I don't see that on the electric side as

yet. I think there is a desire to go back and centrally plan everything, take away the need for the free market signals.

Gas industry has been very successful. I can't say there is one specific thing, but there are many, many new players and that is probably the biggest. There has been a lot of financial tools put into place. Futures market. Once you create that, all of a sudden you start creating pricing signals that are being -- that a lot of people are focusing on, a lot more people than the regular people you had in the industry.

If there is one big thing, it is very many more players in the industry and that increased the activity, which created the growth.

MR. MILES: This might be a good time to break for lunch.

(Luncheon Recess.)

MR. MILES: Thank you for returning. I appreciate your commitment to this conference. We are going to begin the second panel. The second panel has a distinguished number of subject matter experts, individuals very experienced in the energy field. This panel has been assigned the task of identifying factors that affect adequate energy

infrastructure investment in alternative actions.

Panelists have been asked to address why is needed infrastructure delayed or not being built and what barriers have to be overcome? What can state and federal governments do to overcome those barriers?

Following the presentation, we will have distinguished representatives from state and federal agencies to talk about the comments you will be making this afternoon. I think it is critical that you keep that in mind and also you want to explore, do alternatives exist to new infrastructure projects?

I ask each of you to keep your presentations to five minutes. If you hear me start to mumble something here, you know you are over the five minutes. With your cooperation, we can make this a successful panel discussion.

With that, I will start with Pete Dunbar. Pete and I go back many years ago, to the early eighties.

Peter?

MR. DUNBAR: Good afternoon. I have been asked to present a brief overview here of the state's perspective on issues relating to the siting

of energy facilities. Back in the early seventies, Maryland passed enlightened legislation called Power Plant Siting Act applying. It provided for a comprehensive review process consolidated at our Public Service Commission. It is about as close to one stop permit shopping as you can get.

To quote from the statute, the goal is to "ensure that Maryland can meet demands of the electric power industry -- demands of Maryland's electric power demands in a timely manner at reasonable cost while protecting the state's valuable natural resources." To do this the statute established, among other things, the power plant research program, the program that I direct, to manage the technical assessments required for the facility siting and to consolidate executive branch recommendations to the regulator. In Maryland, the regulator is the Public Service Commission, an independent commission.

If approved the Public Service Commission issues a state CPPN usually subject to specific conditions for that facility. If I have done my job, these conditions achieve the appropriate balance among the concerns of the many stakeholders part of any major facility site. This balancing act

has been going on, as I said, since the seventies and has indeed resulted in the generation of needed electricity in Maryland, reasonable pricing in the state and minimal environmental impact as the statute demands.

The planning of generation and transmission facilities was closely coordinating in the siting process since it incorporated the state IRP requirement, integrated resource planning requirement. While requirements for siting remained in place, there is no longer the formal PSC supervised process as in many other states that have deregulated or restructured. For generations that planning function has been ceded to the competitive market. For transmission the function shifted to PJM and APS, the ISO's if you will in that region.

This overall framework and consolidation has survived over the years primarily because it works. I am not aware of a single case where a state level CPC process caused the demise of a generation or transmission facility. In fact, over the last year Maryland has licensed just under 3,000 megawatts of projects, most of which, all but about 10 megawatts of which, are presently under construction. Another 3,500 megawatts are in power

about to enter the licensing stage. For Maryland, that is a very high level of activity. To give you some context, peak demand here in Maryland is about 11,000 megawatts. With this 6,500 megawatts of activity in the pike, that could put us from a state that imports roughly 20 percent of our use to an exporting type of situation.

The same coordinated comprehensive review framework is also utilized for projects in federal jurisdiction. Recall that Maryland is home to the Calvercliss nuclear plant, the first in the nation that succeeded in obtaining a renewal of its operating license. This renewal occurred well ahead of schedule and with a minimum of controversy. The success of this process was not because the NRC kept Maryland and local issues out of the licensing process, but far from it. Maryland was extremely involved and had long-term substantive interactions with NRC and the applicant to ensure that local concerns were met.

And they were met in that case.

Like generation, certification requirements for new transmission -- like generation certification requirements for new transmission in Maryland have not changed with deregulation. Also

like generation, state authority over transmission siting has not resulted in any degradation of service or reliability. Other than the Del Mar Peninsula, which has some unique geographic issues, we have not observed either serious reliability problems or unusual transmission congestion. So far control and planning out of PJM and APS has been satisfactory.

Interestingly, regions to the west of Maryland, not to the northeast, as we have been talking this morning here, have been our traditional sources of inputs. We look with great interest on this upcoming midwest ISO PJOMMU that is in the works.

Summarizing, I think the question -- summarizing, really what the issue is, the question seems to boil down to whether the states are part of the perceived problem in the northeast infrastructure or part of the solution. Our experience really is that we, the states, are, in fact, part of that solution and a very central part. To state it simply, we feel the process in Maryland works and works very well.

Thank you. I will cede my minutes.

MR. MILES: Our next speaker is Richard

Krause, senior VP for Duke Energy Gas Transmission.

MR. KRAUSE: Duke Energy Gas Transmission is the owner and operator of two pipelines serving the northeast region. It is also an investor in the operator of the U.S. portion of the Maritimes project.

This morning several speakers alluded to the growth in demand and made references to the updated INGA study by the INGA Foundation on when we would reach a 32 sealed market. The INGA Foundation was kind enough to distill that down for me for the northeast. Here you see a snapshot of the gas inflows into the northeast for the year 2000.

If you look at 2015, you will see dramatic growth in gas imports from regions outside of the New England area. The eastern Canadian gas is playing a vital role in this study as well as imports from the traditional areas in LNG.

Steve Whitley this morning, in terms of the ISO study, made the observation that they look out two years and they see that the gas infrastructure is keeping pace. But they look out beyond two years and they have concerns.

There is a very good reason for that, and that is, people do not make commitments for pipeline

infrastructure any earlier than they have to. Things change over time. If they can, they will make that decision at the last minute. Given the current processing timelines, a major project can be worked through the regulatory and siting process in about two years, and the market relies on that. I can't emphasize how important that is to the decision-making process, for project developers to have a known time frame with known procedures and a predictable outcome in terms of timing.

We rely on the fact that the PD can come out in three to four months. Preliminary determination on the economic issues is very critical in project development. It makes the project more real for everyone because we now know that the economic assumptions that we were making in terms of prices and potential cost have been ratified by the Federal Energy Regulatory Commission. People can then make the additional decisions in terms of going and talking to investment bankers about financing. The pipeline can consider the timing of the pipeline construction orders and start talking to contractors. It makes the project real.

That predictability is very critical for

a timely infrastructure development.

The environmental siting aspects of building pipelines, the process on balance works fairly well from a pipeline perspective. We know what we need to do. The FERC has been very helpful over the last year in holding outreach meetings in which they brought land owners and pipeline owners together to enhance communication. Our experience in building pipelines is that the more communication you have, the more trust that you can establish that what you are saying you will do is what is going to happen. It is critical in building pipelines. It is not necessarily the be all and end all cure in terms of resolving differences, but if you have trust and communication it goes a long way.

We heartily endorse that. Sharing best practices, one of the benefits of the outreach meetings, has been a benefit to the industry.

Having said all that, the primary challenge, I believe, for building infrastructure is finding a customer who is willing to pay. This whole process starts with someone who makes the economic decision that it will be worth his while to make the financial commitments to the pipeline to put a pipe in ground. And it takes 10 to 15-year

contracts to do that.

In terms of who is signing up for capacity or who will drive that process? Our experience is that it varies. In terms of eastern Canada production areas, the producers will often drive that process. In other instances, it is driven by very local needs of the local distribution companies. They have unique operational issues that they are trying to address. Those are the drivers.

Marketers will step up for capacity. The biggest thing in terms of sending signals is predictability. When customers do not know how they are going to recover the costs that they are investing in pipelines, whether it is the pipeline or the shippers, you have uncertainty. So as we go through unbundling, we have seen instances where our traditional customers, local distribution companies are somewhat frozen in time. They are unable to go forward because they don't know if they are going to stay in the merchant function. They don't know if it is their responsibility to sign up for capacity. The marketers, they haven't established a customer base. They haven't gotten the long-term commitment, so they are frozen in time.

My time is up, so I used your two

seconds.

MR. MILES: Ron Erd from Mirant?

MR. ERD: Thank you, Chairman Wood and Commissioners, for this opportunity to address this vital topic.

We had a great setup earlier today when we talked about all of the different infrastructure needs that we have.

I think I recall hearing that in New York alone there were over 1,000 different infrastructure projects. I am not sure I heard that correctly, but as competitive energy supplier and a participant in competitive markets, what we would advocate and what we think is the most economically efficient is to have the market send the appropriate prices and let transmission generation, distributor generation all compete so we can get the most effective solution for consumers.

Mirant's a competitive energy supplier. We have generation in New York, New England and PJM, approximately 10,000 megawatts generation here in the northeast. We also have additional generation in permitting and development.

As you can see from the chart, we have all the way over here on top of the map, the

merchant sector has delivered in a short period of time -- merchant energy sector, particularly in generation, is not a very old business. Probably five years or less old. Already the competitive generation makes up over a third of the generation marketplace. Not only that. In the last five years it has delivered 90 percent of the new capacity that is there to serve the electricity and reliability needs of the system.

Price controls are restoring the market in stolen private investment. What we have chosen to show today is an example.

We are all familiar with the reliability challenges Gene McGrath spoke about in the last panel for New York City. It is vital that New York City have reliability and last year the New York Power Authority stepped up and put generation on the ground to make sure that the lights stayed on in New York City and that was successful.

What I would like to do is take you through a little bit of math that we did based on reading the publicly available data and assuming that generation gets dispatched any time that the power price is above the fuel cost of that unit.

If you could go to the checks chart? It

is kind of hard to see in this big room, but what you have there, what the bar shows is that if you take the costs as they are all stated in public documents, subtract away the ICAP revenues NYPA received, for the hours that they were in merit, they would have had to have averaged $400 a megawatt hour of energy price.

I think it is a good thing they were in because I am glad that the lights stayed on in New York City. But in order to average $400 over the course of about four months' worth of on-peak hours, which is about the number of hours we estimated was in the money, you would have had to have a month solid of $1,000 prices to get the average up that high of on-peak hours.

So reliability is valuable and one of the things that is sort -- is very troubling actually for people looking to make investments is that we have mitigation procedures that come in at prices well below that. So if we are going to look to attract private investment into the market to provide reliability, which is what we want to do, there has to be a mechanism whereby the competitive market has access to the payments that reflect the value of the reliability as we see here.

The very crux of what I am trying to talk to you about today is that once the wholesale market is allowed to show the true value of energy in the location where it is, you will see infrastructure investment and the most economically efficient investment. The most economically efficient investment will give you the lowest long-term cost to consumers.

MR. MILES: Thank you very much. Our next speaker is Richard Cowart, director of the Regulatory Assistance Project.

MR. COWART: My focus is going to be, much like the last speaker, on the market rules needed to reveal infrastructure needs. I start with a quote from our friend Craig Laser, who recently stated, "The main thing is to keep the main thing the main thing."

The main thing here isn't building more facilities. It is meeting customer needs reliably at low cost and in an environmentally sustainable fashion.

Scott Sitzer of EIA this morning talked about, proudly, the United States' improvement in energy productivity in recent years. It is worthwhile to remind ourselves, while we are

considering policies like this, that improved productivity is, in fact, the engine of economic growth. I would recommend to FERC that, as a general matter, FERC should support market rules and infrastructure policies that over the long term will improve the nation's energy intensity and be concerned about rules that don't improve the nation's performance in energy intensity.

A couple of quick points related directly to infrastructure. First, I was struck this morning by the degree to which we were talking about transmission lines, pipelines and traditional generation. Our infrastructure includes the whole chain from conventional generation through T and D, through distributive generation, and the efficient end use including efficient end use equipment, metering and load response opportunities. And we ought to be thinking about that entire chain as we try to wrestle with infrastructure policy.

Now I know some would say quickly, gee, a lot of that isn't FERC jurisdictional. Transmission siting isn't FERC jurisdictional. That isn't itself a complete answer and one of the reasons FERC is working very hard to cooperate and develop policies with state regulators is because the entire chain

has to be considered. And I would applaud FERC's efforts in trying to put together the pieces that connect retail and wholesale markets.

My second point is that to get the right answers, you have to ask the right question. If we face a reliability challenge or the existence of congestion, the question isn't how do we site and pay for X megawatts of new transmission capacity, but, rather, what combination of resources, including generation, distributed resources and wires can cost effectively and reliably meet this need.

It is true there are barriers to the deployment of infrastructure, but I would also posit that there are significant market barriers that hide the real value of some infrastructure solutions and promote others that are less cost effective. In order to know what infrastructure we actually need, we have to improve the markets and the pricing signals to those who are using that infrastructure.

FERC has already taken some important steps here with respect, for example, to demand side bidding on the wholesale trading floor. Some people talk about the one-sided market as the sound of one hand clapping. I guess after the experience of some

of the price spikes that those markets brought us, I guess I would say it is the sound of one hand hitting yourself in the face.

We really have to learn a lot more about how to structure these markets so that load management and responsive distributed resources are brought to the trading floor.

The same kind of principle ought to invade our thinking about transmission pricing. We have to carefully examine different transmission pricing schemes and investment return offers in order to ask ourselves are we actually incenting the cost effective solution to the problem we are trying to address?

Here I will close with simply the observation that we are in some danger of doing what I might call chasing congestion or promoting congestion by subsidizing congestion relief.

We have an example in New England of some generation built in Maine when the load is in Boston. If you just look at that on a market basis, it looks like, gee, there is a lot of congestion because not all that generation can get to that load.

If the solution is to build transmission

capacity to connect those facilities and to subsidize the cost of that transmission by rolling it into the region's transmission tariff, the consequence is going to be to send a signal to generators that they can locate pretty much wherever they want and someone else will pay for the cost of getting their product to market.

We have to ask ourselves not only what are we doing to relieve today's congestion, but what policy should we be pursuing to send the right signals to all the market participants, both distributed, load center and remote, in the future?

Thank you.

MR. MILES: Our next speaker is Ashok Gupta, director of the Air and Energy Division at Natural Resources Defense Council.

MR. GUPTA: Thank you very much. A pleasure to be here and I am pleased you are holding this event.

I agree with a lot of what has been already said. We look at the issue of reliability, price issues and environmental issues and ask the question how can we deal with all these problems and concerns and also the importance, of course, of integrating our energy and environmental policies

and, as Richard says, integrate our demand side strategies with supply side strategies.

We definitely see the value of new power plants that are more efficient and, therefore, cleaner to the environment. So we support many of the new combined cycle plants because they are clean, efficient, and clearly we think they are an important part of the solution.

The challenge has been, since competition was introduced, what do we do on the demand side? How are we thinking about demand side issues and dealing with things like building codes, appliance standards and DSM, the way it used to be done but isn't being done any more the same way?

We see a huge opportunity in terms of the technologies that are available and pricing regimes that could be put in place that could really get the customer involved this helping to solve this problem. So we are trying to solve a problem by thinking about the transmission, but not really focusing on the customer and what the customer can do and how policy we put in place can help shape that.

One example was the recent -- the whole debate about air conditioner standards which, of

course, contributes significantly to the summer peak demand. Instead of having a strong, aggressive standard, we are rolling it back. So we are working at cross-purposes. We are not looking at what we can do in terms of improved building codes, appliance standards and tax credits on the energy efficiency side. That is at the heart of our concern in terms of dealing with the infrastructure issue.

The other end is the generators, in terms of what is on the other side of the transmission line. We look at some of the plants that are in the midwest, for example, which are very, very dirty, and there is no incentive for us to want to have transmission lines built to be able to buy dirty power. We get the pollution here. Unless there is a strong regime in terms of environmental regulation for power plants going forward and including carbon regulation because it is necessary to provide regulatory certainty.

If you are trying to make decisions about investment in new power plants and you don't know or you think at some point there might be carbon regulation, it is going to certainly delay and change the way people are going to behave and/or

make decisions now that will not be as smart a few years from now if carbon regulation does indeed happen.

I think the issue of how we deal with environmental regulation and making sure that that is integrated into our energy policy is key for us in terms of figuring out how to support different infrastructure projects. It doesn't make sense to build a transmission line knowing that that will mean more pollution for the northeast is the way we look at it.

Certainly the NSR decision coming down the pike is also very, very important in terms of affecting how we think about energy policy and what we think makes sense in terms of providing for the reliability we all want, making sure that prices are as low as we can make them and making sure we are protecting the environment. It is this integration function that we think is critical.

We think, certainly, renewable technologies can play a very important part in solving this problem. Solar is coincident with peak demand and can play an important role in helping reduce peak demand in the New York area. We think that is important. Cogeneration and combining the

power opportunities are huge, but there continue to be huge barriers to that.

I know you are looking at that issue, which we are very supportive of more efficient generation as a solution to meeting our energy needs because it is also an environmental win at the same time.

Thank you.

MR. MILES: Thank you, Mr. Gupta.

Next is Sonny Popowsky, with the Pennsylvania Consumer Advocate.

MR. POPOWSKY: Thank you. Thank you for inviting me. In today's agenda our panel was asked to address four questions and they are on your agendas as well. I would like to focus on the fourth question. That is, do alternatives exist to new infrastructure projects?

I interpreted that question to mean are there alternatives to traditional central power stations, transmission and pipeline projects?

My answer to the question, of course, is yes. In fact, I think that probably should be the first question that we should ask before we simply assume that the answer to every question is more traditional infrastructure. Given the cost in

dollars, the environmental cost, the social cost that I am sure you will hear about today of some of the projects, certainly we want to make sure we at least considered the alternatives.

Obviously, we don't know what technologies in distributed generation, transition improvements, metering improvements might help us meet those needs over the next decade or two. Though even today I think we do know that at least we ought to be examining the demand side response as part of any rational infrastructure development program. When I talk about demand side response, I am not talking about charging people $1,000 a megawatt hour at peak hours when there is nothing that they can do about it. Rather, I am talking about the kind of programs that utilities can pay a customer $5 a month to cycle down their air conditioner or, obviously, the kind of programs available to large, sophisticated customers who have metering capabilities where they can actually be paid to reduce load during peak periods.

The second thing I think we need to do is to eliminate market power. If energy and capacity prices are artificially raised through the exercise of market power, then every infrastructure decision

that we make will be wrong. That is, no one should invest in infrastructure based on price assumptions that result from the abuse of market power. In fact, you shouldn't pay too much for demand side resources in order to avoid costs or prices that are based on the abuse of market power.

Finally, when you consider new infrastructure, which I think you must -- I am not saying we don't have to -- I think we have a good model for that in the PJM regional transmission expansion planning process. PJM addresses critical issues of generation interconnection and transmission on a regional, integrated basis and plans have to ultimately be approved by an independent board that has no reason to favor either a transmission versus a generation solution.

By working on a regional basis and applying an integrated analysis, I think PJM has been able to come up with solutions that imposed lower costs, both lower costs for consumers and lower costs for society as a whole.

If I can give one example, in the years 2000 and 2001 the PJM transmission plan consisted of approved, actually mandated $670 million of transmission improvements to be made throughout the

PJM territory. But almost all of that was improvements to existing transmission facilities and to enable interconnection with new generators. At least in Pennsylvania only twelve miles of new power lines were included in the entire PJM expansion plan that were necessary for reliability in central Pennsylvania.

Moreover, the line that was actually built was built in the GPU territory at a cost of $22 million, even though the problem, the actual reliability problem, was in the PPL territory, where it would have cost $50 million to fix.

Now, that line in Pennsylvania still has to be sited or is still in the process of being completed, but I think Pennsylvania is up to the task of siting a 12-mile line PJM has found to be necessary to preserve reliability in the regional electric system. I don't think we need a federal backstop. What I think we need is an independent -- and I think we have, at least in PJM, an independent regional organization that can look at these issues on an integrated basis. Then we need state commissions and state governments that have confidence in the independent regional organizations and then are willing to do the difficult work of the

actual siting in a manner that does the least harm to individuals and communities and provides the most benefit to society.

MR. MILES: Thank you very much. Our next speaker is Christine Uspenski. She is an electric analyst for Charles Schwab Company.

MS. USPENSKI: Just to tell you a little about who I am and what I do, what I do for Charles Schwab is I follow the electricity industry from a regulatory, legislative and political perspective.

My clients are institutional investors. They are the people who buy the equities and debt of the companies like Mirant that are out building the infrastructure as well as owners of the classic utilities from GPU to other companies.

One of the things I would like to do is share with you the answer to the question "What can be done to overcome some of these barriers from the investment perspective?" I have had the good fortune to work with the Western Governors' Association Infrastructure Financing Committee and I would like to share with you some of the observations I have gone back to my clients to get for them.

When it comes to financing generation,

that is substantially addressed through existing finance approaches. That is really easy and straightforward and why the generation sector was able to have a large contribution to capacity nationally.

However, it is true, as Ron said, that the intervention of price mitigation violates that model. But the good news is, Sonny, we don't need market power to make that model work.

Transmission, however, is an entirely different kettle of fish, if you will. Wall Street has not seen people come to the market and ask for funding of large scale transmission projects. In fact, the very large ones we heard about this morning aren't at the point where they are being solicited for active investment.

The way transmission is still being approached, as far as Wall Street is concerned, it is still bundled within the general capital expenditure budget that is presented to investors every several years for financing as part of a bundled package.

When it comes to institutional investor concerns about what is going on with transmission, I can tell you that it really is all going to come

down to where you, as stakeholders, make the decision on what cost allocation is going to be because the FERC can set a rate, whether it is 10 or 13. The point is, until you, the stakeholders, through a RTO or through your participation at the public utility commissions, decide what is the most palatable way those costs will be passed to consumers, that, ladies and gentlemen, is the regulatory uncertainty that is holding everything up.

Wall Street is really rather indifferent to whichever one you choose. If you choose to have a very high insurance, guaranteed socialized rate structure, then financing for that will be relatively affordable. If you prefer to have a leaner, more just in time, more efficient approach, it will have a different rate of return, but your economies will be on the fact you won't be overbuilding and have a lot of slack in your system.

Either way Wall Street will price those for you and it will be fair. But the problem is, Wall Street can't do anything for you until you, as stakeholders, have made up your mind.

One last thing. Credit issues were raised earlier today particularly for those like

Mirant that are experiencing a real backlash from the Enron debacle and a general slowdown in economic demand that has contributed to a very different demand outlook than what we saw for generation just twelve months ago. Clearly there is an overreaction to the strength of oversight and the strength of the credit agencies and how they approach their job and whether or not the metrics they were using were in fact appropriate.

Fortunately, I can tell you, it will pass. Not tomorrow, but it will pass soon and I do not think there has been serious damage done to the ability of generators to finance generation projects over the long term. However, the next couple of years may be tough.

Not to repeat Ron's eloquent explanation of why we have problems with the general pricing model, I would like to thank you for that and I would be happy to answer your questions and provide any information that I can.

MR. MILES: Thank you, Christine. Our next two speakers are a councilman from the City of Mt. Vernon, William Randolph, and an attorney representing the City of Mt. Vernon, Michael Zarin.

MR. RANDOLPH: Thank you. This

afternoon I am in mourning, yet I remain ever hopeful. I am in mourning for communities which have been and are victims of environmental injustice, but I remain hopeful that energy providers, energy regulators and all will confront the issue in a meaningful way.

Having said that, what is environmental justice? Environmental justice is when providers and regulators consider the composition of an affected area to determine the presence -- to determine the presence of low income or minority populations.

Environmental justice is when providers, regulators consider the cumulative impacts of their plans relating to human health and the environment.

Environmental justice is providers and regulators recognizing the interrelationships between culture, social, occupation, history and the economic factors of communities where pipeline transmissions are being considered, as well as the physical environment for proposed sitings.

My challenge to regulators and, indeed, to FERC today, is to establish means by which analyses of communities are done with the same sincerity, the same diligence of the factors within

that community that are done in terms of financial analyses, engineering analyses of a project.

Failure to do that creates a problem for all involved. It creates a problem in terms of expenditures, both for providers, regulators and communities. It provides a problem in term of general resources lost, resources in terms of time, money, et cetera.

This morning Mr. McGrath noted that one of the things that has been lacking or certainly is not what it should be is the whole question of comprehensive planning so that we can creatively handle problems, potential problems before they do, in fact, become problems.

I urge FERC, energy providers to establish departments, staff, personnel who will do the appropriate community analyses taking into consideration demographics, income, businesses, civic and social institutions which serve the people of a given community. For, in the end, if that is not done, we lose. We all lose. Providers lose in terms of negative PR. Regulators lose in terms of populations not trusting their judgments, their diligence in terms of arriving at judgments, their studying of the facts.

In that context also, we all lose in terms of meeting the needs in an amicable way of our nation's energy.

Therefore, I would like to pose to this body the whole issue of developing departments and staffing and personnel and raising analysis of the factors that impact a community to the same level that one does when it comes to engineering and when it comes to the finances and the costs.

As was said earlier, if you don't ask the right question, you simply do not get the right answer.

Thank you very much.

MR. ZARIN: Rick, I realize we are stretching our five minutes, so I will be very brief. I guess the challenge here is how do you turn an amorphous concept that I think is viewed today as a barrier, environmental justice, into an asset? How do you allow that concept to add credibility to the process?

I think as Bill said, environmental justice doesn't usually arise until some community becomes a major stakeholder in the process. If that stakeholder is not involved in a meaningful way from the beginning in looking at alternatives, in

understanding the factors, the needs, the engineering, the finances, and so forth, then the process is not going to have credibility with that community and it becomes a court battle and contentious and we lose or seriously undermine, I think, the predictability which has been one of the cornerstones to advancing the energy program.

I think one of the critical factors of that is to understand that environmental justice is not a linear process, that a community that has a wire or fast line that goes through it, a low income, disenfranchised minority community, it doesn't have the same impacts as possibly the community up line or down facility. It has its own unique culture and history. I think that is usually said in a very academic sense, but think of a community that is struggling to revitalize, a community where you really do have disenfranchised people and think about one day the working mothers, just trying to hang on, learns in the newspaper -- and that is so often where they learn for the first time -- that a high pressure gas pipeline is coming within ten feet of their front door or public school or the like. Think of the psychological violation. Think of the credibility of the process at that

point.

Or a community that is struggling to convert, say, their waterfront from an industrial to a mixed use area literally -- and I have a case like this -- learns about the construction of a new power plant on the waterfront that doesn't even conform with the new zoning, again, in the newspaper for the first time. And this is where even the elected officials in this particular community learned about it.

So it really is a commitment to understanding the fabric of that community. The churches, the health centers, the senior centers, the public housing tenant associations. That is the fabric of those communities. That is where the information is disseminated. That is where people live, learn, work and play. And that is the group that has to be brought into this process if we are going to have an effective energy policy, if at the end of the day the process is to have the credibility and the predictability that I know so many people in this room desire and need.

MR. MILES: Thank you very much, Michael.

I heard basically three areas that maybe

the panelists and others can focus on. One was, I think, the State of Maryland said you have been able to overcome some barriers and you don't see yourself as a problem but as a solution. Sonny, I think you said in Pennsylvania, you are also in line that things are progressing and you are able to work effectively with PJM. How can you expand that on the regional level? Maybe there ought to be discussion on that.

The other issue this morning and this afternoon I have heard in various format, how important certainty is.

Richard, I think you said you found your experience is that with pipeline construction good communication equals good trust. Maybe that is another thing we can follow up on.

Why don't we start with Sonny and Pete. You each gave good examples, I think, of how states individually work. If others want to join, how do you do that on a regional setting?

MR. COWART: Can I start with a question this time? Sonny, you mentioned 600 million or something like that in transmission investments in PJM?

MR. POPOWSKY: 670.

MR. COWART: Does anyone know how much of that $670 million of upgrades could have been cost effectively avoided by investments in distributed generation, load management or efficiency?

MR. POPOWSKY: I don't know. I would say -- like I said, what I was impressed with was the fact that only 22 million, at least in Pennsylvania had to require whole new transmission lines. So these were at least improvements to existing facilities that I don't think are as disruptive or harmful.

I am not aware of that further analysis being done.

MR. COWART: So you are not aware of whether those who were upgrading those facilities, for example, put out a request for proposals or put their proposed investment plans on the table and asked others, can you come in and meet this need for a lower cost?

MR. POPOWSKY: Christine was just asking, that was part of the PJM transmission expansion plan, which is primarily done for reliability. I certainly think PJM could expand that to include looking at other alternatives. That

certainly wouldn't be contrary to my views. How it would work, I am not quite sure.

I guess to get back to your original point, I think we are doing it on a regional basis, not just Pennsylvania, not just Maryland, not just New Jersey, not just Delaware. We are doing it on a regional basis. I think you have commissioners here from the PJM territories who I think -- I think -- have a lot of confidence in that process. That is why, that is one of the reasons I think it works.

MR. MILES: Christine?

MS. USPENSKI: My understanding is that that budget that is out there and that expansion plan was developed through the stakeholder process at PJM, and I would hope that they did incorporate some study of what the alternatives are. That is one of the reasons why PJM is considered one of the leading examples of how state culture groups can work functionally together.

How does it work as far as getting the money for it? The PJM plan is then accepted by the member organizations and then they go to Wall Street with their budgets and say, "This is my part of my plan, which I will get back in ISO approved rates from the Federal Energy Regulatory Commission," and

then they would fund it. That is how the loop closes.

Ideally, that is what we are hoping to replicate on wider and wider regional levels, that we are integrating the opportunity to review alternatives like DG, demand management, like upgrading existing lines so that the expansion into virgin environmental areas is minimized. Then that adds to the certainty and credibility of the transmission owner that comes to Wall Street because he is not likely to get sandbagged by an environmental review after the fact.

MR. COWART: I wanted to respond by saying I agree with virtually everything you just said, except I would just question whether, in fact, a serious analysis of alternatives actually occurred.

When this question arose in New England and we asked the New England ISO the equivalent question, they said, "Yes, we looked at alternatives." When we asked "What alternatives did you look at?" they said, "We looked at 17 different transmission alternatives."

"Well, did you look at any non-transmission alternatives?" and the answer was,

"We don't do non-transmission alternatives, so we only looked at transmission alternatives."

The last line of your response I think was quite telling, considering where we are sitting today, and that is, those costs ended up being recovered in FERC-approved rates. The question that we need to keep bringing to this process is whether the process of determining what that expansion plan is ought to be guided by FERC as one that looks at what could be more reliable and less costly alternatives.

MR. GUPTA: I just wanted to describe simply what the Bondville Power Administration is doing in this area in terms of transmission planning. They commissioned a study looking at the alternative question. They said, "Before proceeding with the construction of transmission projects, Bondville Power wants to ensure it is providing the most cost effective solution to the region's transmission problems from an engineering, economic and environmental standpoint.

As part of its evaluation, Bondville Power will consider whether non-transmission options can be employed as viable alternatives to transmission expansion. Non-transmission solutions

can include pricing strategies, demand reducing strategies and strategic placement of generators."

They had commissioned a study. The study came back laying down a planning process they wish to employ and we think that is a very good model in terms of transmission planning.

MR. MILES: Ron, do you have any thoughts?

MR. ERD: I do have some thoughts here. One of the alternatives I guess we haven't really discussed is in these ISO's we have financial transmission rights. So it seems to me if someone wants to put capital into the transmission system, what they ought to get in return is a set of financial transmission rights and that that ought to be sort of a self-policing, self-funding mechanism. In other words, economically justifiable upgrades will be done because the economic benefit will accrue to the entity that puts in capital in the form of financial transmission rights.

Sort of like a pipeline open season.

MR. DUNBAR: Getting back a little to the question of the regional, how would you expand Maryland's experiences to a regional level? I think there is a couple of things there. One, you have to

be careful what is meant by a regional level and how large is the regional level? How responsive is that regional level to the communities that are involved, as we saw from the end of the table? How knowledgeable are they on these facilities?

Based on Maryland's experience, part of our emphasis and our encouragement would be to ensure -- how shall I phrase this given the past war of northern aggression -- to ensure the state still have and retain teeth in their ability to govern and to site at a regional level and that they are not excerpted. Here is an existing body that can respond to these issues that are known to be local and can respond to them.

MR. MILES: Peter, when PJM needs to build something and, Sonny, you are involved with the siting, do they work with your office? Do they coordinate? Is that at that level?

MR. POPOWSKY: Christine made a good point. I should have started at the beginning, the stakeholder process. Our office, as of last week, had voting rights in PJM. We are ex-officio members. In any case, I certainly think Rich certainly has raised issues we ought to bring up on the next go-round to make sure the expansion process

is all inclusive. One of the high points of PJM is participation of a lot of stakeholders from just about every side of the table.

MR. GUPTA: Half of 1 percent?

MR. POPOWSKY: It is better than nothing.

MR. DUNBAR: Certainly we had positive experience with PJM interaction. When we are looking at transmission interties and interconnects at the regional level, those have to expand beyond the simple state boundaries, if you will.

COMMISSIONER MASSEY: I think one of the issues we struggle with is, to what extent is a regional planning process consistent with a market-based approach? My own view is, a regional planning process is essential. But one of the things I do struggle with is how specific should it be? What kinds of issues should it take into account so that regional needs are met in a way consistent with a market-based approach? It seems to me that is what we are talking about here. I think at least I need some help in thinking through that.

MR. ERD: One of the things I heard from Steve Whitley from the New England ISO, in terms of

the system planning they are looking at, it's just to make sure they don't get hit with something that they weren't expecting. So something that -- it seems to me something that is more advisory and forward looking, because if you truly have a market based system, the market ought to have a pricing mechanism that would encourage investment where it is economically needed. This board, this planning, regional planning could be -- could do these studies and look far out into the future and look for potential problems coming down the line.

MR. COWART: Your question is a terrific question because I know we are all struggling with the questions of how do we reconcile a much greater market influence in an industry that historically was essentially planned and vertically integrated and we have to invent new mechanisms to answer your question.

I would have a three-part answer. First is to build strong markets. That is, if we are going to rely on markets to tell us what we need, then we need to build markets that actually, themselves, are sound and competitive. And that goes for many aspects of energy and reliability markets and also, where you can, the building of

transmission.

Second is to have the principle that cost causes should pay. When we are socializing something, we ought to be conscious of the fact that we are socializing it and try to figure out rate designs that properly send price signals to market participants.

Third, as an outgrowth of the planning process, whether in a state or a region, let's do the following thought experiment. Suppose you did a planning process and you determined that we believe that the least cost, most reliable transmission solution for problem X is transmission line Y and we think it is going to cost $300 million. One way to test that in a market based way would be to put the $300 million on the table and have a process that says to the world, "Here is $300 million to the bidder who can come forward with the solution that is equally reliable or better and lower cost."

If you can bring that solution forward and if you can be held accountable for that solution, you get your bid. You get the security associated with those dollars in the same way that a transmission builder would get it.

If you are prepared to increase

transmission tariffs by $300 million to pay for it, you ought to be prepared to increase transmission tariffs by $250 million to get the same benefit and give the supplier of those services the same security as the builder of the wire.

MR. MILES: Michael?

MR. ZARIN: I may not be addressing the Commissioner's question directly, but with respect to regional planning and siting, which is of particular concern to us, I know -- and I heard earlier presentations and I have experienced that at least as far as the public review or even the internal, quote unquote, environmental review process goes, there is really a breakdown probably no different than just in the overall energy capacity development, but a breakdown in the siting process when it comes to taking into consideration the different diverse energy participants.

For example, in our case or in a case we are involved in now, the siting of the facility is based upon the transporter and the distributor and them coming to some reconciliation of their respective needs. But the review process is bifurcated by FERC's jurisdiction over the transporter, but some other jurisdiction over the

distributor. Therefore, there is no comprehensive review or discussion -- and it precludes any meaningful discussion of the siting issues, especially the interconnection points between those two, because one process believes it doesn't have jurisdiction over the other.

It also occurred recently with a gas turbine plant that I was involved in where the location of the plant was dictated by the availability of the gas, but the review under state environmental law would only look at the actual siting and didn't feel it had jurisdiction over the gas supply issues and was only concerned with the impacts of the actual siting of that facility. That seems to be somewhat endemic of at least the siting process and seems not to be that inconsistent with some of the other energy development planning issues that have been raised here.

MS. USPENSKI: I think part of the problem is when we are talking about a $300 million transmission line, for example, a pipeline, that that doesn't include all the costs because right now it is very clear that there is a cost associated with resolving this problem that isn't part of the project map yet. I think that is what you were

addressing, the fact that are we getting everything in there that we need to get in there as far as really coming to a regional solution.

When you hit the wall with a community, for example, that feels it wasn't part of the process, how then do you put the dispute resolution on a track where it gets resolved? Because if meeting the needs of this community become economically -- change the economics of the project, then maybe another market based solution becomes more attractive. But if the costs aren't measured to the community, then the rest of us aren't dealing with all the matters.

I think that is part of what you were trying to address, which is there is an imperfect way infrastructure is being evaluated on an environmental basis that perhaps there is a way -- I don't know because, unfortunately, I am just not as familiar with your situation.

But is there a solution as far as relocating or moving something or addressing in some way to compensate community X for being subject to hosting infrastructure Y?

It might be too late for your situation, but that might be part of the costs that are not

being rolled into the evaluation of a project on a market basis.

MR. KRAUSE: A couple of comments. From the pipeline perspective, we generally start with an open season. Once we read in the price another pipeline is having an open season, we send our engineers to figure any way we can to come up with an open season a little better, cheaper, a little quicker to market. There is a lot of competition that goes on perhaps behind the scenes, but, nevertheless, goes on between pipeline providers to get that market to commit to their project. The competition doesn't end there, as you all know. Once an application is filed, if for whatever reason a pipeline feels it has a better alternative, it is not unusual for the pipeline to make suggestions to the Commission that here is a better way of doing it, environmentally, costwise, et cetera.

Market forces on the cost side work very well in terms of generating projects driven by cost, by environmental impacts, our goal to minimize it and our goal to get to market. That is what we sell and there is a lot of competition.

MR. POPOWSKY: I don't want to overstate the level and make it sound like there is some sort

of central planning going on at PJM, but what PJM tries to do is establish a rational structure for things like transmission interconnection that will enable the people who want to go out in the market at least to build generation to be able to do that on a rational economic basis. Certainly in terms of generation, obviously they don't plan the generation, but they make it possible through the planning and interconnection process, they make it possible for those companies that have made those market choices to become part of a reasonable market.

The other thing they do on the transmission side is, most of these projects -- I think all these projects we are talking about really go to the reliability of the system. That is, if a transmission improvement is needed for reliability, then it gets done. It just has to be done. The reliability of the system is paramount.

I think the question we haven't yet quite faced is how do you get purely economic decisions for some $300 million transmission line versus something else? I don't think -- we certainly don't do that. PJM doesn't do that level of economic planning.

MR. MILES: What I am hearing is sort of an undercurrent that you want certainty but also want good communication in order to build trust. Councilman, you want to make sure you are part of the process and, Richard, I get back to the point you made early on, good effective communication.

Christine, if you have all these processes, how do the financial people view this whole -- it sort of seems like two or three parallel processes going on at the same time.

MS. USPENSKI: As long as the processes have a certain regularity to them, again it comes down to structure, whether a pricing structure -- this is sort of an approval and acceptance structure. Actually, the more robust and vigorous it is, even if it does take more time, if investors feel the T's have been crossed and I's dotted, then that is the required level of certainty. That is why the stakeholder process is actually something I have not found Wall Street to be particularly skeptical of. They would rather see all the cards on the table in one big brawl, if that is what it will take to get it done, then to have an agreement they thought they had be revoked, changed or costs added to it further down the road.

I think one of the things that Wall Street is looking at as far as RTO's, as they really are still just beginning to learn about them and what they are about, is the fact that if there is a robust stakeholder process that takes place before projects come to the Street, then what you are going to have is regulatory certainty behind it.

It is not really Wall Street's role to influence how that stakeholder process happens. That is really not important to them because there is an appetite on Wall Street for all different levels of investment, whether very close to the cost of money or whether it is an aggressive, premium project. But there has to be some sort of confidence that if I put my money in a generation project at 18 percent, that I will get it. As soon as it hits 95 on a sunny day in summer, I am not going to get it regulated out of me because it has to compensate for the days when it is going to be 10 because I will be paying the cost of money and it is not running.

The more robust and structured the stakeholder system is, the more effective it is in bringing the least cost financing to a project because then there can be comfort that the rules

aren't going to change halfway down the road.

MR. MILES: Ron?

MR. ERD: I wanted to ask Christine to comment. We have multiple stakeholder processes in this business and it seems to me -- I want to clarify. It seems to me what you are saying is if we have a RTO process that comes out with a set of rules and the rules are going to be in place for certain, then that is what the street is looking for, as opposed to an ongoing stakeholder process where the rules are always in flux? Is there a distinction there?

MS. USPENSKI: Yes, there would be a distinction there. That is what they are looking for. If there is a certain process that they can begin to get faith in, then that is something they can handle.

I think we have shown that that can happen because as extensive as some environmental reviews are, and I bet you know how extensive they can be, once you feel you have gotten through it and get your permit, you know you have something in your hand that now has a value to it. NEPA was something investors were very concerned about changing the ability to do business. Over time there will be

comfort with it, but it can't be a stakeholder process where every time we sit down we change the rules. It has to have a very standardized -- to itself at least -- regular methodology in which there is a certain amount of understanding that even small concerns and large concerns will be heard. That will help, because it is defining "just and reasonable" on the fly, it is defining what is "harm" is on the fly in changing circumstances that will change the demand for return.

MR. MILES: Any final, brief comments you would like to make so the next panel is mindful of them before they start, before I turn it over to some people from the audience? Anybody?

MR. COWART: I can't resist. I am going to follow up on something Sonny said a minute ago and leave you with a thought. Sonny said something I have heard many people say along these lines. If a transmission investment is needed for reliability, it just gets done.

I am going to be the first person to support reliability. But I would leave you with the following thought. There are a lot of ways to improve reliability in the electric system, including distributed generation, energy efficiency,

load management. You name it. The challenge is to figure out which ones ought to get done.

MR. MILES: We have a few minutes before the next panel. Questions? Anybody from the state commission or agencies?

SPEAKER FROM THE FLOOR: Christine, my question is to you. If a transmission company's project has now increased -- for example, using your numbers, from 300 million to 400 million, a cost has come out that was not seen, is there a way for that company to recoup that investment?

MS. USPENSKI: It depends on whether or not the rate -- what the revenue requirement was. If they have got the anticipated recovery of $300 million and it is going to be a $400 million project, I would certainly hope they would rethink going forward with it.

I think the issue I was trying to raise in response to Commissioner Massey's question is that if we are going to use market based definitions to determine costs, then one of the challenges we have is costing out some of the intangibles which impact on communities.

We have been through this over and over again with EPA. What is the cost of a saved life?

What is the cost of averted health care? It is an imperfect science, but it is something that needs to be part of that stakeholder process because if those concerns aren't addressed initially and they come up later, then it is wasteful not only for the company but to the investors in that company, to anybody they have recovered rates from for a project that doesn't go forward.

The stakeholder process of working into a process that I think the FERC is really pushing for under the RTO program, is to be inclusive, bring in some of the intangibles, whether fuel usage, environmental justice, environmental concerns, you have to get them on the table and get them addressed and find solutions. In that way, when that is done, getting the money is easy.

MR. COLEMAN: I am Ray Coleman from Mt. Vernon.

I heard some very interesting remarks made here today. I have learned a lot. I am glad I was here to be a part of this and have the opportunity to speak.

All of you have some very interesting comments. Somehow I am going to address this as a question or statement. If I had to put my money

into the stocks, I would give it to Ms. Christine to invest.

Recently a group of us from Mt. Vernon visited Energy Source in D.C. and met some of these people here today and we didn't have the opportunity to speak. It was very humiliating to be able to sit there and not make any remarks or criticism at the visit to D.C., but now they are here so I am happy to have the opportunity to let them know how we feel about the pipeline, which they already know.

I would like very much to have -- that visit to D.C., if I may say so, in my own way, taught me a lot. Also, it taught me -- I will make it very brief because I do get long-winded sometimes.

I would just like to have seen more of a Rainbow sit-in. That is one of my concerns, whether it be in the near future. If you are going to have trust in one another, then you have to bring more of a Rainbow sit-in to the board. It looks better in communication. Thank you.

SPEAKER FROM THE FLOOR: As someone who is experiencing the Millennium pipeline issue with regard to terrorism, with regard to all the public schools in Briarcliff Manor, I thought of how

terrorism might relate to the issues regarding infrastructure. I had a question for anyone on the panel: Whether they have seen any impediments to infrastructure secondary to the threat of terrorism, especially with regard to natural gas pipelines and, secondarily, do you anticipate any changes in the future of the infrastructure with regard to that threat?

Lastly, how should this impediment, if you think it would exist or will exist, be addressed from the energy regulatory perspective?

MR. DUNBAR: Just a quick response. I am sure there are others who can go into more detail. Senator Michalski of Maryland recently brought up the issue in the Cole Point LNG facility of terrorism and the vulnerability of this site and whether or not security issues were adequately covered in that proceeding. In fact, the Commission stopped that proceeding or recessed at that point in time and addressed those specific issues. So, yes, there has been some reaction, I think.

MS. USPENSKI: Another thing, too, is that one of the first things that FERC did do after the September 11th attacks was put on an expedited track submissions from companies that were making

specific terrorist prevention and security upgrades to assure companies that they would be addressed in an expeditious manner so that there would not be an issue of securing funds to make those upgrades.

It is my understanding that there has not been a problem with companies finding that they cannot get investors to support safety related upgrades.

MR. COWART: Investments to secure fragile facilities are critical. I am not surprised that the nation is going to go ahead and support that. We also ought to think strategically about the architecture of the system.

If you do examine the architecture of the system, you learn that a number of the policies with respect to distributed resources, energy efficiency, investments and load management that make the system more reliable on a hot summer day also make the system less vulnerable to intentional attack.

MR. MILES: Richard?

MR. KRAUSE: One observation. Obviously 9/11 tragedy caused all industries, pipeline included, to go back and look at security issues. The industry as a whole is working together to share best practices, to see what we can do to assure the

security of our facilities.

It is an issue that is on our minds and on the minds of the regulatory bodies that we work with. As was noted, the FERC has already given the guidance that recovery of cost for security should not be a concern in terms of pipelines dealing with these issues. We are confronting them and dealing with them.

MR. MILES: Our next panel is to start at 3, but it is about five to. We will take a short recess.

(Recess.)

MR. MILES: I want to thank all of you for coming back for the final session. The final session today is discussion by state and federal officials, closing remarks from the commissioners.

We have a distinguished panel with us today. Glenn Booth, Canadian National Energy Board. Chairwoman Maureen Helmer, New York Public Service Commission. Chairman Welch could not be here from Maine, but we have Chairperson Arnetta McRae from Delaware Public Service Commission.

We have Chairperson Don Downes from the Connecticut Department of Public Utility Control. From the D.C. Public Service Commission,

Commissioner Ed Meyers.

MR. BOOTH: Thank you, Rick. First, I would like to say it is a pleasure to be here. I have been observing the process with interest because we don't usually do this type of thing as a reg leader up in Canada. It seems to be a very useful process.

I don't have a lot to say today. I would start by saying, first of all, we don't seem to have the same infrastructure problems right now in Canada, so I do perceive this very much as your issue. What I will briefly talk about is our agency and I have been talking to people at breaks as to what we are about. I will give a little commercial and move on.

First, in Canada, we are somewhat like the FERC with respect to gas, pipeline construction and gas exports to the U.S. However, we are not at all like the FERC with respect to electricity. The big difference is, in Canada electricity falls almost entirely under provincial jurisdiction under our constitution. We only approve short interties across the border. We also approve electricity permits, but we have never turned down any of these in our history.

Canadian electric power industry is quite different. Most of the ties are north/south rather than east/west. We don't have a national grid. It is too spread out with too small a population, another reason for perhaps a lack of federal jurisdiction over the industry in Canada.

Our agency spends about 70 percent of our time on gas and 10 percent on electricity, though a lot of that gas exported is being used for electricity generation here in the U.S. and particularly the northeast. With respect to my agency, just like the FERC, we have articulated some clear goals of what we are trying to achieve. One is we want Canadians to derive the benefits of economic efficiency and part of that is having an adequate infrastructure that meets the needs of the shippers and users of the system. We believe that a little more capacity is a worse evil than not having enough. We do promote the development of adequate infrastructure.

We definitely operate within a policy context. Our by-word is wherever possible let markets decide. Only regulate when absolutely necessary. All our regulation takes place in the context of NAFTA. Our key regulatory criterion,

before we approved the export of electricity or gas, is what we call fair market access. That is simply to ensure that Canadians have access to the gas and electricity on equivalent terms and conditions as exported. In other words, no abuse of monopoly power and segmented markets in some way to the disbenefit of Canadians.

When we regulate, like the FERC, we strive to strike a balance between economic, environmental and what I will call social objectives. Last year we had one application for a short power line intertie across BC to the United States. Ten thousand letters from the community concerned about it. We have to take those things into account. Though we don't approve a lot of electrical power infrastructure because there are interties across the border and most of the population live within 100 miles of the U.S. border, those interties are usually going through some populated areas and are going to raise the same types of issues as they do here.

The last comment I will make, I heard this morning a lot of projections about increased use of Canadian gas. You might find it interesting. Out west where I live, in Alberta, we to a lot of

supply analysis because the gas business is located there. There has been record drilling the last two years. We had a record drilling year in 2000, smashed the previous record and smashed it again last year.

In spite of all that drilling effort, production really leveled off from where it was. We believe the basin is quite mature and will not be increasing at a rapid rate, though we believe increases are possible. Something to keep in mind, though we have the offsetting benefit that we believe gas production from disabled fields can increase considerably.

MR. DOWNES: Thank you. I am Don Downes, chairman of the Connecticut Commission, appearing today for Jack Goldberg, with whom I will get even for this if it is the last thing I never do.

I guess I -- actually I wanted to just try and crystallize one issue that has come up over and over again today and offer a couple of quick thoughts on this.

Here, in New England, we have perhaps gone a little further down the road than is true in some other regions in the country. Five of our six

states are engaged in at one level or another, a restructured environment and admittedly we are at various stages of this. But as we go through the process several things have become apparent to us. I think maybe -- I think maybe the biggest single factor is that there seems to be a missing piece here.

There clearly is a traditional state regulatory structure that is in place in each of our states. Clearly, there is obviously a federal regulatory structure in place. There are a series of regional entities, all of whom I think are struggling to fill the void. Our friends at ISO New England, for whom I have great regard, are very independent, and that is as it was intended to be and should be.

However, that independence at times cuts both ways. On the one side, they are indeed insulated from a number of the political and economic and other kinds of influences, and that is often a good thing. On the other hand, the lack, in particular, of political power at times is not a very good thing. Political power in the American system, after all, is what tends to drive consensus and resolution and decision-making ultimately.

So we find ourselves in New England, I think, searching for some regional solutions. We -- by way of evidence, I suggest to you that our friends at the New England Governors' Conference, the Council of New England Governors, the New England Conference of Public Utility Commissioners, ISO New England, and a variety of other folks, from time to time are all actively involved in this process.

I guess what I would draw from this is that clearly with issues like transmission, for example, my friend and former commissioner, Mr. Cowart, was talking about how we ought to look at all the alternatives. And, indeed, in New England there are very dramatically different viewpoints on the merits of various transmission plans and, to some extent, naturally, they tend to line up according to who is paying the bills.

I would suggest that a regional approach is at least as important from the point of view of identifying the problems as it is from the point of view of solving them. New England has historically been able to reach consensus on a wide variety of issues so long as everybody can reach the threshold issue of figuring out what the most important

problem is and attacking it.

I guess where I am trying to lead to is that one thing we ought to reflect on fairly carefully is the idea of trying to come up with some sort of regional mechanism that will have some of the best advantages of the independence of an ISO, but also be firmly tied to and able to persuade and to motivate the political structure in order to get the necessary political backing to make this go.

One of the things I think we tend to ignore is that restructuring is not, in fact, a national program, even though it has been supported by the federal government in a variety of ways. It depends, in fact, on the consensus of the legislatures in the various states, at least in my region. For that reason, I'd suggest to you that while politics might not be the most attractive thing in the world in every situation, it is absolutely essential in a variety of them.

I guess my basic theme here is that I think we ought to spend some time looking for an appropriate regional mechanism that will provide some of the best of these.

MR. MILES: Chairwoman Helmer?

MS. HELMER: I do have to start by

thanking Chairman Wood and the FERC commissioners and the large number of staff who came to listen, not only to the commissioners but to the participants. It is helpful to the process and our ability to work on these issues going forward.

Unfortunately, unlike Glenn, I can't sit here and say this is not my problem. We have looked at a number of infrastructure challenges today and they are very serious challenges in both the short and long term.

Reliability is absolutely of the utmost importance to the City of New York and the State of New York. I have to agree with Gene McGrath who today -- and I noted this for the record -- referred to me as his boss. I am going to remember that, too.

I have to agree with him when he talks about the multiplicity of stories that come out of a situation where there is a power outage and the truly devastating impact that that can have both in terms of health and safety and the economy.

New York, I think, has made a lot of progress, in some respects on its own, in respect to reliability issues, distribution issues, generation issues. We have tried to improve our siting

process. We have developed, I think, a very robust demand side market. We put in place the small gas turbines, most notably the Power Authority turbines. Power Authority really stepped up to base and took care of a serious reliability problem last summer at great expense to itself.

I think we tried to create the kind of retail markets in New York that will facilitate new generation in the state. But we do recognize, I think very seriously, that although we like to think of ourselves, like Texas, as being kind of an island, we are really interconnected with this region. We are -- at this point, it is imperative that New York work with its regions in all directions. In New England, in the PJM territory, our Canadian neighbors to the north, Ontario and Quebec. It is very important for us to work to resolve the issues that we still have to resolve. And certainly one of the biggest issues that we have to resolve still is the transmission issue.

We heard from a number of people today about the Central-East constraint. That constraint impacts the ability to get Canadian power done, to move power across New York between PJM into New York, into New England. It doesn't, obviously,

resolve the New York City constraints, but it is a very large constraint that affects this entire region. That issue is something I think we all have to work on together. Some of the resolutions I think people pointed out numerous times today, not every resolution may be a transmission resolution. But we need to figure out what the resolution is or what the combination of resolutions are.

It does rise, as somebody pointed out, with more generation below the constraint, on the other side of the constraint, perhaps over time the constraint will be eased. But we need to know what that is. One of the reasons why New York is so interested in being involved with the other ISO's and with our Canadian neighbors is so that we are able to plan together, do transmission planning together so we can figure out what the best resolution of those issues are.

If we don't do that, we will be looking at the one resolution that was discussed today, which is the 200 or $300 million, 1,000 megawatt transmission line with the host of local problems, the host of environmental problems and host of issues that that brings to us.

I think it is very important that we work

together to address these planning issues and that perhaps this is the kind of issue that really can't wait for a RTO or series of RTO's. This is an issue we know is a problem now. I don't think I heard anyone in the room today say that the Central-East constraint was not an issue we need to address. I would suggest that all of us, working with the FERC, and working with our counterparts in the other regions, begin to look at that carefully and develop some sort of process to find out what are the best results or combination of results to address that issue.

Finally, we were asked to react to some of the things that happened today, that were discussed today, and another theme that was brought up again and again today is the issue of diversification of fuel supply.

We are very concerned in New York, we are very concerned about the fact that all of the power plants that are being recommended right now or at least being proposed right now are natural gas. It is obviously very good for the environment and very good particularly in New York City where we have particular air pollution issues. That is a very positive development. But we do need to think about

where that places us in terms of our reliance on gas both from a reliability perspective and from an economic perspective.

We are looking at that within our state. We have an energy planning process, like many states do, which is a process that includes not only the PSC, but the various other agencies in the state that have a stake in these issues. Fuel diversification is one of the top issues we will be looking at as we move forward through that process.

In closing, I want to say that I believe that the state has done a lot to make progress on these issues, but we are facing, as was pointed out today, a very difficult summer in 2003. In order for us to have a sustained economic environment so that New York can continue to rebuild and to grow, we need to work not only within the state and our colleagues. Again, thanking our colleagues at FERC for reaching out today and listening to all of us in New York. Thank you.

MS. McRAE: I, too, would like to thank the FERC commissioners and staff for convening the conference today. It certainly has been informative. But there are a few other people I would also like to thank. One is Gene McGrath, who

put a human face on our discussions. We all know how bad fish smells.

The other is our colleagues from Mt. Vernon, who, by virtue of their conversation, raised some of the issues that we in the states face in making decisions about what is in the interest of a given state or region on some of the issues being discussed.

Often we get so caught up in the dialogue about statistics and data that we lose sight of the fact that there are human faces behind all of this.

I would also like to seize the opportunity to tell you a little more about Delaware because, in fact, if we were not meeting in the northeast, I would have had to spend the first five minutes pointing out exactly where Delaware is. But we did hear a lot of discussion and saw a lot of slides that talked about where load constraints were and various problems. But Delaware wasn't pictured in any of that.

A piece of that is that Delaware is a very, very small state. But it is -- part of the state is situated on a peninsula. I am so happy someone was generous to share a map that I might use to help you take a look at Delaware's circumstance.

If you find Delaware -- I think this was gratis from FERC. If you find Delaware on the map, one of the things you will notice is, there isn't much of a transmission infrastructure in that state. What you will also see is, there is a little bit of generation, and there is a gas pipeline that is also rather limited and it is essentially fully utilized right now.

This is not just Delaware. The peninsula covers Delaware, Maryland and Virginia. We three states have to work together because we have common interests.

On the peninsula, we are surrounded by water, so there is not a lot of choice about where and how you can build. Clearly we were excited by the discussions about transmission building is not always the only solution.

Because of the time constraints, I won't say all the things I planned to, but I will point out that I wholeheartedly endorse an approach that calls for integrated planning, where all of the stakeholders, including the regulators and community people, and certainly the industries that serve the system, are present to address the kinds of things that we at least should be considering.

I think that we are really off to a very good start in getting things handled. I am also mindful of Commissioner Massey's concern about how do we get into planning and also support the idea of markets functioning naturally. I think that is where the creativity comes in, that we are challenged to do some things. In our last panel, I think we heard some good discussions about ideas that we can pursue.

Another thing is, at a state to state level, we can really cooperate in information sharing. For example, I received from a commissioner in New Hampshire, Nancy Brockaway -- many in the audience may know her. She sent me some correspondence on a program that New Hampshire had introduced to encourage demand side management called "Pay As You Save." It is a program that is set up to allow residential customers to be able to buy appliances through load management, by savings on their electricity and gas. They can use those funds to purchase things they need in their homes.

Information sharing, cooperation at all levels of government, I think, are going to be very key in these times. I will be certainly happy to discuss them more. I see Ed chafing at the bit to

speak.

MR. MILES: Commissioner Meyers?

MR. MEYERS: I would like to talk a little about the regional planning mechanisms. It is my last couple days at the D.C. PSC. I am actually going over to the FERC staff on Monday in a regional planning capacity to work with the states.

I would like to talk about another planning process, and that involves planning with the RTO's for infrastructure development. Somebody once told me, you know, you really shouldn't be involved in "so be it" style central planning; but then, again, you shouldn't be involved in "so be it" style planning either. There is an in between ground there. That is why I am interested in state planning, working with RTO's for infrastructure development.

As a matter of fact, Arnetta was past president of the MAC group, Mid-Atlantic Council of Regulatory Utility Commissioners covering all Mid-Atlantic states. We have been working for maybe a year and a half or so on a planning process to accomplish many of the things we have been talking about here today.

That process involves establishing a

regional council on reliability and the environment. In this process, the states would work with all the stakeholders that Arnetta McRae mentioned and the ISO's, RTO's, also perhaps the air directors and issues involving reliability and the environment.

As we have been talking about today, in our state processes, as state legislators, we had been, maybe still do in some cases, but it is mostly past tense, balancing out supply and demand needs. And that still needs to be done on a regional basis, a very vital need there, where you balance out your generation supply, your transmission supply, and also look at the demand side of the equation, namely, demand responsiveness, end use energy efficiency, and DG, of course, and try to link the wholesale and retail markets together more so.

Just a little bit on wires charges. I think something like 18 states around the country have wires charges to fund energy efficiency as well as low income programs. Unless I am missing something, there is not a whole lot of impetus behind growing those wire charge programs and making them effective, but a process such as this could combine the efforts and build the results to be achieved into the equation balancing demand and

supply so that you can really cost out all of your supply and demand needs.

So I am not sure how this can be formalized or if it should. We were talking about just doing it anyway, and I think we can do so. But it is certainly something to consider as we go forward.

MR. MILES: Thank you, Commissioner.

At this stage, I would invite any other state representatives or anyone who would like to comment.

I turn it over to our chairman.

CHAIRMAN WOOD: We have the Connecticut, New York, Delaware commissioners here. Paul was here earlier from Massachusetts.

Anyway, I notice from the staff's report, one the Commission looked at last year on TLR's, and we heard a lot about the one in southeast Connecticut -- southwest Connecticut. And we heard a lot about the central New York one as well.

This one, even though it says southeast PA, it seems to be right at the tip of the peninsula.

MS. McRAE: That doesn't count.

CHAIRMAN WOOD: I am going to -- take

this as a supposition that the engineers made the case in the objective study of the system that today these congestion points are big and need to be fixed. Let's take that.

What do we do to get that? Walk me through a hypothetical process that would kind of happen to where -- I know they kicked around path 15 since Donna Summer was on the charts. It is finally getting done because the federal government is going in there now. On the charts the first time. I know she has had hits since.

That is a long time to be in kind of a planning mode. I heard this morning and this afternoon a lot of, I think, faith in the planning process and high expectations being placed on the planning process, but to me planning is the first half of a two-part equation. Planning and execution. So I think we at this L-shaped table and some of our colleagues at the siting agencies, depending on the state, are the execution half, or at least we are the last people that have to say yes before they go to market and to the field and start building.

How do we get these fixed? What do we do next?

Maureen, you are the wise one.

MS. HELMER: I am in trouble. We are all in trouble.

CHAIRMAN WOOD: You got the first 271 in the country. You are the wise one.

MS. HELMER: I think you have heard the seeds of it throughout the day, chairman. The idea of some kind of procurement process where you look at possibly not just transmission responses, although there certainly are some very significant transmission responses that could deal with the situation, including some technologies that may not necessarily require new lines.

I think you heard from Maryland today, or maybe Sonny, about the fact that there are a lot of things you can do short of building brand new lines. There are the new technologies. Commissioner Brownell was asking about the technology in New York State being experimented on now by the New York Power Authority. And I don't know if that has any application to the situation.

There are a number of super-conductivity issues and a number of things out there being looked at that are seeking investment. They want to invest their money somewhere. To have some kind of process

where parties come in and make proposals about how they would resolve this issue or at least part of this issue, and whether you were to do that or whether we were to do that -- the Central-East constraint is in New York, but again there may be resolutions outside of New York that people may want to propose. So it may be -- I am told at least there are things that could be done in Pennsylvania, for example, that might help to resolve that issue.

I think that, with some signals about how you would be willing to pay for it or who would be willing to pay for it, or at least some assurance whether on the state or local level as to how that would be paid for I think would go a long way.

We talked before about one of the issues here and I think the gentleman from Niagara Mohawk pointed out, in this case New York could tell Niagara Mohawk to resolve the constraint by building a transmission line. We have the authority to tell them to build it, we have the authority to site it. But as Niagara Mohawk pointed out, Niagara Mohawk's customers could actually be affected by that resolution. Their prices could actually go up. More importantly, most of the benefits of it, even if they don't go up, most of the benefits of it will

be seen by participants outside the Niagara Mohawk territory.

It does cry for a broader resolution than just a state agency telling a state utility to go build a power line. I think you saw today that there may be other potential resolution.

MS. McRAE: I would like to comment, too. That also supports the notion of comprehensive planning. I think you heard earlier from Richard Cowart and Christine who spoke on the last panel. Together they presented some ideas about identifying -- you put up a graphic and showed pictures of constraint, but further study might reveal that there are ways to address that that don't, as Maureen has suggested, that don't include transmission building.

But unless you study the whole problem and figure out just what are the avenues, then you can't really work toward an effective solution.

They have offered, having studied this, the suggestion that has been put forth. Quantify it and let creative bidders come forward and address ways they can speak to the problem. You know the price tag on it. I can tell you a lot about the cost for congestion in my state for example. You

have a dollar to work from and can look at plans within that context to move forward.

CHAIRMAN WOOD: In the case of, for example, take Delaware. To the extent that there is a federal issue there, and to answer Maureen's question, can we jointly publish, "Here is an identified need, here is the underlying engineering data that made us think this need was something we need to do something about. Can we get some market solutions to that need before we go forth and mandate one through the old regulatory process?"

The constraints on the peninsula. I heard you very often on that in October when we first started talking about the need for regional organizations to do something on planning. That might be intriguing, to find out what somebody would bid as a solution to that. It might be a lot cheaper than we think.

MS. McRAE: Actually I would have a positive response to that. But short of success, I think there always has to be preparedness to address a continuing problem. I would welcome throwing it out to the market and see what could be done with it beyond what we traditionally think of.

CHAIRMAN WOOD: If it doesn't happen,

would Delaware be in a position to then say, local utilities, you need to upgrade this -- I don't know if they are a 135 line up to 230 or something?

MS. McRAE: We have some latitude with respect to liability. Some of the issues are economic. We might be able to get some upgrade accomplished as a safety measure, but if safety is not present, you can still have congestion and cost that is economic and we really don't under the present structure. With restructuring we gave up certain powers that we may have had over some of the local utilities. So we would really have to look elsewhere. We would have to look at PJM's planning process essentially to get it done or through some other channel.

CHAIRMAN WOOD: I am committed to find whatever that is so we can answer these questions so when we have these meetings next year, we report on that while this map here, while not completely unclogged, it is on the way, so we can look at the next generation of needed investment, whether it is on demand side, supply side, delivery side, whatever it is, then going forward.

I don't sense that they are going to get the perfect planning process in our lifetime,

because we have never had one. So we've got to do this kind of group grope until we get there. I am willing to do whatever on our behalf we can do to move this from planning to execution. I think we have got some great potential projects for joint partnership, a multi-layered partnership here to do that.

MS. McRAE: Actually, too, in preparation for this session today, I know my staff, who is present, gave a lot of thought to ideas as to things that we could do to help identify where money may exist in the regional system. Like we have the financial transmission rights that right now, the holder of the rights gets the benefit when there is congestion. That might be money that could be transferred, to use to incentivize transmission building. In that way everybody sees some direct benefit versus the right holder.

Just looking at ideas, and I think the more people who put their thoughts to the process, the more likely you are to get ways to innovate on some things we historically have done one way or approved as the normal practice.

If just our small group was thinking, and I certainly heard a lot of great ideas in the

discussions this afternoon, I am sure if we formalized a process more would come out of it.

MR. DOWNES: I'd suggest to you that the answer may have -- that the answer may be different in different circumstances. The southwest Connecticut problem, I have been very interested to hear the discussion today about looking at the alternatives. And the history of the southwestern problem is kind of instructive.

The first time the transmission improvement was proposed was back in the 1970's. And, in fact, it was postponed for a variety of different reasons, not the least of which was that the decision was made that it would be more cost effective and, frankly, more politically palatable to, A, upgrade and improve the 115 kV system already out there and, secondly, by carefully deploying and carefully coordinating the generating and transmission maintenance, that we were able to continue running from the 1970's until the current time on the existing transmission lines that were out there.

So we are kind of well beyond the "let's study the alternatives" arrangement. We did that 30 years ago and we, in fact, went about the process of

doing exactly what a lot of folks have suggested, which is, rather than go out and build a new transmission line, trying to find small alternative strategies that will work.

All of which was great fun, but since then demand has grown by more than 25 percent and, ironically, the southwestern Connecticut bottleneck in particular, which I would submit to you is substantially different than the one in southeastern Massachusetts and southern Maine -- we are not a pass-through bottleneck. Our problem is we can't actually generate enough power inside that area to do it economically.

So our problem in Fairfield County, I think, is one where there are not very many alternatives left at this stage of the game and that now it has become, indeed, much more of a political and social problem, and on two different kinds of levels. On one level, of course, there is the "not in my backyard" phenomenon. Southwestern Fairfield is some of the most densely populated part of the country. It also happens to have some of the very highest per capita incomes. We have lots of people, very well educated and who have lots of time and resources to pursue the principles that they think

are important.

We feel that there is a distinct symbiosis between the southwestern Connecticut problem and the bottleneck problems that are further up New England, the southeastern Massachusetts and southern Maine problem. Some of the generation trapped in those places could, in fact, be moved into Connecticut or, as far as that goes, to other parts of New England, driving down prices of all New England. There is kind of a chicken and egg thing. No one wants to be the first to go out there and commit the dollars. And, frankly, to the extent that we socialize those costs across the entire grid, there are some folks in states across New England that don't have these constraints in their states and understandably are less than enthusiastic about paying for them, particularly where they seem to benefit someone else primarily.

I suggest to you the problem in New England might be better solved by trying to work an arrangement that solves both the bottleneck problems and the southwestern problem and wrap them all up because I submit almost every state's ratepayers would get a benefit from solving the two problems.

CHAIRMAN WOOD: You are preaching to the

choir.

COMMISSIONER BROWNELL: What can we do to facilitate that?

MR. DOWNES: I suspect the single most important thing, those of us on the Public Service Commissions, on our energy and technology committees of the legislatures, they all get it. Who doesn't get it is the public.

We find ourselves in a situation in southwestern Fairfield County where we are running a series of old, inefficient, fairly highly polluting kinds of power plants and we are in that mode because we decided not to do the transmission lines some time ago. One of the inadvertent products of that was to paint ourselves into the corner. We can't turn off the Norwalk and Bridgeport stations long enough to repair them at this stage of the game.

I suggest that first off, FERC, by educating people -- and, frankly, by lending the credibility of FERC to the proposition, explaining that you do, in fact, view these as critical problems is an important beginning.

Number two, the process you followed in terms of starting to develop the RTO situation I

think is highly instructive and I think would be useful here. Literally getting the parties together in an appropriate forum where people could do a little bit of understanding of how the mechanisms work and what the benefits might be to everybody might go a long way toward driving that process. Because recognize that even though -- even though all six state commissions may think this is a good idea, until the legislatures and the governors' offices in those states come along, you are not going to get a resolution because the politics of the thing will bog you down.

COMMISSIONER MASSEY: I have a question. Everyone here knows that one of our standards for RTO's is an effective regional planning process and we have had a lot of discussion about that today.

My question is, will an effective, credible regional planning process, if done well, make it easier to solve these problems in your state?

MS. McRAE: It would certainly give us more assurance that FERC is aware of what the problems are in our state. We recognize that your responsibility is a national one. I don't know that we can fully expect you to appreciate the nuances of

every state that is within your jurisdiction.

What the regional planning process does is lends credibility to the discussion of everyone having a seat at the table in some way, that you are looking broadly at a region and its needs versus sometimes the big picture.

I do think the tendency is to focus on large markets because whatever goes right with them is good and whatever goes wrong with them is very bad. Unless there is a process that looks at the whole market versus the large markets, I think you run into resistance and problems. So regional planning would certainly minimize the potential for that.

MR. DWORKIN: I am Mike Dworkin, the chairman in Vermont, one of the many states that has combined one source siting authority, the State Utility Commission. The question you ask is one we grapple with theoretically and pragmatically.

The answer to your question on my part is a resounding yes, a serious regional planning that had credibility for integrated consideration on a level headed basis would be extraordinarily helpful in credibility of a siting decision.

Ultimately, under our law, like most

laws, if you are going to have siting and its associated eminent domain, you need to make determination of the public good. That requires a consideration of alternatives and that requires some consideration of whether this is the best solution. If the context we deal with is one project at a time coming in, each project runs the more or less valid belief of those that don't like it that the demonstration is just ending up to support that project. If there is a credible regional planning background that gives context to it, that means the project is weighed against something which is a discipline, the intellectual discipline of being forced to be created a priori, so when the project comes afterwards, conditions have been set by reality, not by the project.

To be credible requires a few things. One is adequate resources. Another is technical competence. Perhaps most important is independence from the market participants, so it is not driven by the people who make more money off one result than another result. Finally, what it requires is that there be some serious meaningful way to say that a integrated assessment of options isn't just a choice of 17 different transmission paths or five

transmission paths and five generating paths, but really an open door to ways of solving a problem that includes, obviously, the demand side alternative that can pursue something like Rich Cowart's bid in a meaningful way.

If you meet those conditions of credibility, independence, of competence, credibility of scope, then having something like the regional body has a plan that is the necessity as a backdrop for each specific proposal is a tremendous gain in the credibility of what we have to do.

CHAIRMAN WOOD: Did the process that led to -- I think this were six projects in New England that came out over the last couple months. Did that process meet those criterion?

MR. DWORKIN: No. I could go on at length as to ways of improving, but let me say there is a long way to go on them. I will only mention one fear I have. Inherent in the decisions about pooling is the risk that you have six times replicated a scenario like this. Projects proposed in Vermont, if it costs $50 million, it meets a clearly defined need. It turns out there is a cheaper generation at 40 million, cheaper efficiency alternative at 35, but since Vermont only pays 5

percent of the cost of transmission pooling, it is hard to justify spending 35 or 40 instead of 2 and a half million.

At the same time, down in Connecticut they are making exactly the same decision in favor of some project that is only justified because they export theirs. The six of us are locked in a loop where we each export the cost of the most expensive solution to each other and wind up picking it again and again.

CHAIRMAN WOOD: I am not offering this, but I am saying, it could be fixed if there were one big regulator to handle all this

MR. DOWNES: Can we vote on that?

MR. DWORKIN: You said preaching to the choir. Once upon a time I was a federal regulator. It is easy for me to believe some of the solutions are bigger than any given state. Even if the answer isn't imposed by a larger than state body, which, frankly, I am one of the few state regulators would accept, the description of the problem and particular solutions by an RTO that is bigger than a state but more hands-on than FERC is an advance over where we are now.

COMMISSIONER MASSEY: Michael, I think I

agree with what you said, but there may be people in the audience who listened to what you said and would respond, "This doesn't sound like a market."

What is your response to that?

MR. DWORKIN: I guess my response is that the purpose of a market is to provide an efficient distribution of goods and that in this case we heard this morning an awful lot of things, such as that having an efficient market probably meant a reserve that would be in the range of a third of the market instead of the traditional one-sixth; that it meant a willingness to have people pay for reliability as a common good, even though they weren't going to individually use it; that it required bringing into the decision-making a bunch of community values, protection of individuals that are what an economist calls externalized and what some called ignored in the traditional financial analysis.

There is a lot of things that derive from the fact that electricity is instantaneously needed, difficult to store, almost impossible to do without and delivered to a shared transmission grid. So it is a common good that means we are all in it together in a way that individual, bilateral,

voluntary contracts don't recognize well.

So there is a big chunk of common value that needs to be reflected either through a planning process or vast regard of ancillary services. If your answer is it doesn't sound much like a market, my answer is the solution needs to go beyond just a plain market.

MS. HELMER: May I respond also?

I just want to tend to agree with Commissioner Massey on this one. I'd like to distinguish when I talk about planning, I really am talking about transmission planning.

I think in terms of generation, at least our experience in New York, if that is worth anything, is that congestion pricing really has sent the right signals as to where to locate generation. And we are seeing plants being proposed in the right places electrically.

Again, we still have to sit down. We have all the issues with local communities and environments and part of the siting process has to look at those things and make sure the exact location someone picks is the right place to put that plant and it is important we deal with local communities in making those decisions.

But in terms of transmission versus generation, on one side we have a good place, a good mechanism that sends economic signals as to where to put plants and it is borne out.

On the transmission side, we don't have that. Whether it is because we don't have the right construct or maybe we will never have because of the nature of the transmission system and at least for the next five years or so looks like a natural monopoly. It may not be true in the long run, but for the short to medium term is a natural monopoly, you have a different set of circumstances.

That is not to say the answers may not include non-transmission answers. That is where it is helpful for us to be working together because some of those may have retail implications, some may have more traditional FERC implications.

To go back to Chairman Wood's suggestion that a joint type of proposal for joint constraints would be helpful. How we make decisions at the end of the process between them is something I think we need to give some thought to. At least the idea of going out there and saying we have all identified this constraint, what are some options?

SPEAKER FROM THE FLOOR: Just a brief

point. Gene McGrath said -- I am Doug Frazer from New York State, Governor Pataki's office.

He made the distinction between transmission projects needed for reliability purposes and what you might think of more as a market based transmission line like the tie across Long Island Sound which is billed as a merchant tie line. Maybe that is something FERC needs to factor in, the difference between reliability based transmission upgrades and other upgrades that might come forward in the market solely for the economic benefit that they can provide the developers.

MR. MILES: We are at 4 o'clock, the set time for the end of the panel. The next thing is for any closing remarks anybody would like to make. Before that happens, can I make one comment to the audience?

First, I would like to thank you for the courtesy and attention you gave today. The other thing is, this docket is AD02-6-000. That is on the notice you may have picked up. If you have any additional information you would like to provide that relates to the questions on the different panels, the subject matter, use the docket number.

We would also seek your thoughts and

recommendations on how any future workshops ought to be conducted so that we can do this more correctly in the future and be more instructive.

With that, I would turn it over to Commissioner Brownell.

COMMISSIONER BROWNELL: I am saying good-bye and thank you on behalf of my two colleagues who have planes to catch and may have already missed them. We certainly all appreciate the panel's involvement, the hard work the staff has done and your attention and participation.

I would suggest you might want to join us on Valentine's Day for a demand side management conference we are co-sponsoring with the Department of Energy. We clearly heard, I think, from every panel today and from every panel we had during RTO week, of the importance of demand side management. We want to educate ourselves and the public about what choices are out there because they range from the large to the small. We want to make them more accessible and then talk about the public policy issues that are getting in the way of their introduction. We hope that you will attend, and if you can't attend, we hope you will look on our website for the outcomes.

CHAIRMAN WOOD: To wrap up, I want to thank this nice audience. It means a lot to our efforts, as you mentioned, Don, to bring up the knowledge about the state and the importance of the energy infrastructure in all its regards. To have folks from industry, communities, from the government side of the fence and interested citizens -- I have seen a good number of those and I appreciate that very much. That really furthers that effort in a first step of many.

I look forward to some concrete actions. I think it will be a no-brainer, Maureen. We certainly ought to give that a shot, what we can do on the central New York constraint. As we move forward with our developments and RTO process on how to best utilize regional organizations to do regional things, then I think that provides a good groundwork for that effort.

Thank you, panelists, staff, and parties. Have a nice evening.

(Time noted: 4:00 p.m.)